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Effect of intensive and extensive interval training on some Physiological Variables

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Abstract
The present study aimed to evaluate the effects of intensive and extensive interval training on some Physiological variables viz. Resting Heart Rate (RHR), Peak Exercise Heart Rate (PEHR), Cardiorespiratory fitness in terms of maximum oxygen uptake (Vo_2 max), and Fasting Blood Glucose Level (FBGL). For the said purpose twenty two (N=22) college women of age ranged between 22-24 years were randomly selected. They were divided into two equal groups, keeping eleven subjects in each group, viz. intensive interval training group (IITG) and extensive interval training group (EITG). Both the group (IITG and EITG) were undergone their respective training program for the period of eight weeks. Both type of interval training were structured scientifically and intervened to the subjects for three days per week. All the subjects of two groups were tested on said variables at prior to and immediately after the training programme.In the present study For the sake of analysis of data mean and standard deviation of the variables were calculated and statistical t-test was used to compare the mean. The level of significance was set at $p<0.001$ level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used.The result showed that there was a significant mean difference ($p<0.001$) exist between pre and post test condition of intensive interval training group (IITG) and extensive interval training group (EITG) on RHR, PEHR, Vo_2 max. In FBGL significant difference was observed ($p<0.001$) between the pre and post test condition of the IITG but the difference was not statistically significant for EITG. However, the improvement on RHR, PEHR, and Vo2 max were greater in EITG than in IITG. But reverse result was observed in case of FBGL
Key words: Intensive Interval Training, Extensive interval training, Resting Heart Rate, Peak Exercise Heart Rate, Vo_2 max, and Fasting Blood Glucose Level.

Introduction

Interval training is the most versatile method of endurance training which involves repeated efforts art at a relatively faster pace, separated by measured intervals of incomplete recovery (Singh, H, 1991). Interval training in the sports field is a popular means of training that affects the physiological functioning of the body and brings the change in the synchronicity of the internal organic function which ultimately influences the performance and efficiency. But many questions regarding the effectiveness of Interval training upon the functional capacities and efficiencies of human remain unanswered. Though the advantages and disadvantages of different interval training programs have been investigated earlier but the result are not still enough to conclude. So the present study was under taken to contribute to the body of knowledge about the affectivity of different interval training program on Cardiorespiratory functioning of human being. Thus the purpose of the present Study was to find out the effectiveness of intensive and extensive interval training and its influence upon certain physiological performance variables of young college women.

Methodology

Subject & Design: 29 college women athletes belonging to the age group of 18 to 24 years from state institute of physical education for women, Hastings House, Kolkata-27, were selected randomly. The subjects were eliminated on the basis of the condition applied that each subject must have a minimum training age of 2-3 yrs. Finally twenty two (N=22) eligible subjects were divided into two equal groups, keeping eleven (n=11) subjects in each group, viz. intensive interval training group (IITG) and extensive interval training group (EITG). The equated group comprised of a close values of certain variables like age, height, and body weight.

Criterion measure*:* The variables studied in the present study were Resting Heart Rate (RHR), Peak Exercise Heart Rate (PEHR), Recovery Heart Rate (RHR), cardiorespiratory fitness in terms of maximum oxygen uptake (Vo_2 max) and Fasting Blood Glucose Level (FBGL). Resting heart rate, peak exercise heart rate & recovery heart rate was recorded by palpation method. Predicted VO_2 max was estimated by Queen's College step test and Blood glucose level was measured by Glucometer (Accu-check).

Training programme*:* Prior to the intervention of 8-week intensive and extensive interval training programme the researchers ensure to prepare and equalize the fitness of all the female athletes and enable them to tolerate the training program for eight week long. For that all the subjects were undergone a preparatory training program for 2-week duration. After this initial conditioning program intensive and extensive interval training were given separately on both the groups for 8-weeks. It was given for three days per week and in a day the work out lasted for 30 to 45 minutes approximately. The training session includes warming up and cooling down processes. The training programs carried out in the college ground of SIPEW, Hasting house, Kolkata-27. The subjects underwent their respective training programs as per schedules (tab-1) under the supervision of the researchers. The study included pre- and post- test measurements on either side of the 8-week interval training programme. Apart from the intervention of treatment both the group were participated to their regular physical education activities as per their curriculum in concern, which was not under the control of the researchers. The subjects were requested to refrain from eating, drinking or doing any strenuous physical work at least for 2 hours before the onset of experiment.

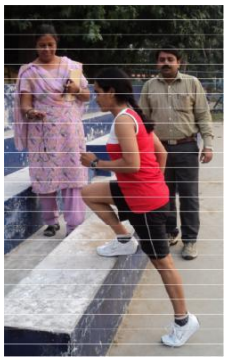
Table-1
Intensive and extensive interval training programme

Week	Intensive Interval Training			Extensive Interval Training		
	Training	Intensity	Duration	Training	Intensity	Duration
1	(50 m. x 6) run (35 m. x 10) run	(75-80)%	35-45 minute	(500m. x 7) run	60%	45-60 minute
2	(50 m. x 6) run (35 m. x 8) run		35-45 minute	(500m. x 7) run		45-60 minute
3	(50 m. x 5) run (35 m. x 6) run	(80-85)%	35-45 minute	(500m. x 8) run	60%	45-60 minute
4	(50 m. x5) run (35 m. x 6) run		35-45 minute	(500m. x 8) run		45-60 minute
5	(50 m. x 5) run (35 m. x 5) run	(85-90)%	35-45 minute	(500m. x 9) run	60%	45-60 minute
6	(50 m. x5) run (35 m. x 5) run		35-45 minute	(500m. x 9) run		45-60 minute
7	(50 m. x 5) run (35 m. x 5) run	(90-100)%	35-45 minute	(500m. x 10) run	60%	45-60 minute
8	(50 m. x 5) run (35 m. x 5) run		35-45 minute	(500m. x 10) run		45-60 minute

Prior to the training sufficient worm-up of 10-15 minute were given for both the groups and after the training proper cool down exercises were performed as a whole.

Prediction of VO_2 max*:* Participants were asked to take complete rest for half an hour before performing the exercise so that pulmonary ventilation and pulse rate might come down to a steady state.

The Queen's College Step Test (QCT) which has been recommended as a valid and reliable indirect method for prediction of VO_2 max was adopted in the present investigation (figure-1). Direct estimation of VO2max is exhaustive, laborious and difficult experimental protocol (Fox, E.L., 1973). In brief the step test was performed using a stool of 16.25 inches (or 41.30 cm) height. Stepping was done for a total duration of 3 minutes at the rate of 24 cycles per minute which was set by a metronome. After completion of the exercise, the subjects were asked to remain standing comfortably and the carotid pulse rate was measured from the fifth to the twentieth second of the recovery period. This 15 second pulse rate was converted into beats per minute (15 sec pulse rate x 4) and the value thus obtained was put in the following equation to predict VO_2max in ml/kg/min, as proposed by McArdle et al., 1986.VO_2 max (ml/kg/min) = 65.81 – (0.1847 × pulse rate in beats per min)



All experiments were performed at a room temp varying from 27–29°C and at a relative humidity ranging between 70 and 85%.

Measurement of heart rate:

(RHR): Each subject was allowed to take rest at recumbent position for a minimum period of half an hour so that the pulse rate might come down to a steady state. At the end of this period of initial rest, resting heart rate was measured by counting the beats for 1 minute feeling the palpation of the radial artery as shown in figure-2.

(PEHR): The maximum heart rate was recorded manually from the time taken for ten carotid pulsations immediately after the exhaustive exercise (Astrand and Rodahl, 1970).

Prediction of Fasting Blood Glucose Level (FBGL): FBGL measurements were carried out by Glucometer (CONTOUR^{TM} TS) by Accu-check technique as shown in figure-3. The pre- and post training venous blood samples were obtained from the participants between 8:00 and 10:00 AM after a 12-hour overnight fast and at least 48 hours after the last exercise session.

Statistical analysis*:* In the present study For the sake of analysis of data mean and standard deviation of the variables were calculated and statistical t-test was used to compare the mean. The level of significance was set at $p<0.001$ level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used.

Results

In Table-2 the mean ± standard deviation, mean difference of obtained data and 't'-value between pre and post test belonging to different physiological variables (RHR, PEHR, VO_2 Max and FBGL) as measured and calculated by different tools and techniques of intensive interval training group (IITG) and extensive interval training group (EITG) have been presented.

Figure- 2

Figure- 3

Table-2 't' value between pre and post test mean of intensive and extensive interval training group on RHR, PEHR, VO2 Max and FBGL

Variable	Group	Pre-Test	Post- Test	Mean Difference	't'-Value
		Mean ± SD	Mean ± SD		
RHR (bit/minute)	IITG	68.94 ± 6.70	65.30 ± 5.40	3.64	6.19*
	EITG	72.40 ± 3.86	68.00 ± 3.05	4.40	4.49*
PEHR (bit/minute)	IITG	178.10 ± 11.07	172.30 ± 11.78	5.80	7.38*
	EITG	184.20 ± 7.36	169.50 ± 6.70	14.70	7.36*
VO_2 Max (ml/kg/min)	IITG	34.33 ± 1.74	36.70 ± 1.44	2.37	16.02*
	EITG	35.29 ± 2.80	39.58 ± 2.49	4.29	23.29*
FBGL	IITG	92.40 ± 7.81	83.70 ± 9.20	8.70	4.02*
	EITG	95.10 ± 6.23	91.20 ± 5.45	3.90	2.07

Table value of 't' for df (21) at 0.001 level of confidence = 3.85

From table-2 it is evident that in RHR there was significant difference ($p<0.001$) between pre and post treatment condition of both IITG and EITG. It also showed that the MD (mean difference) of EITG was higher than IITG. Again in PEHR, there was also significant difference ($p<0.001$) existed between pre

and post treatment mean of IITG and EITG and also showed the MD (mean difference) of EITG were higher than IITG. In VO_2 Max there were also significant difference ($p<0.001$) existed between pre and post treatment mean value of both IITG and EITG. It also showed that the MD (mean difference) of EITG was higher than IITG. In FBGL though there was significant difference existed between pre and post treatment for IITG group but for EITG group there was no such significant difference in FBGL between pre and post treatment conditions.

Fig – 4: Comparison of means of physiological variables between Pre and Post test conditions of Extensive Interval Group.

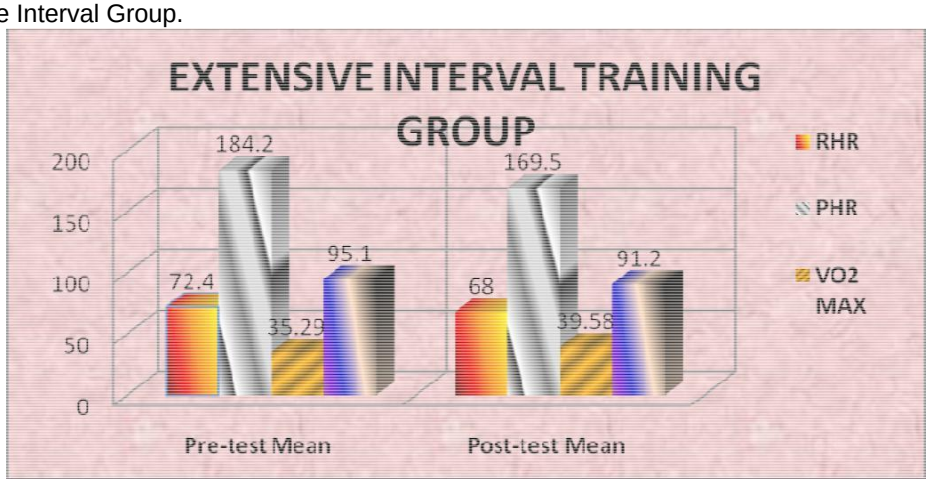


Fig – 5:
Comparison of means of physiological variables between Pre and Post test conditions of intensive Interval Group.

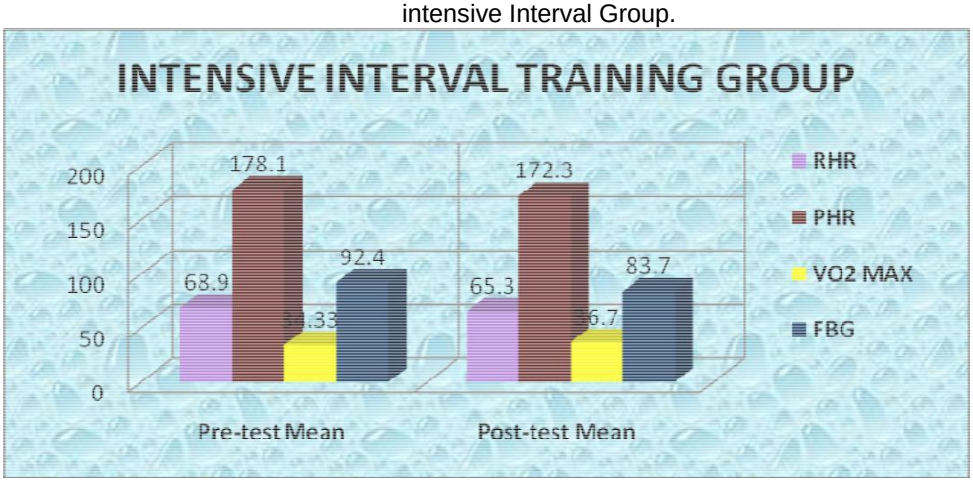


Figure- 4 and Figure-5 graphically represents the pre and post treatment condition of Extensive Interval Training Group (EITG) and Intensive Interval Training Group (IITG)

Discussions

The result implies that Resting Heart Rate (RHR) and Peak Exercise Heart Rate (PEHR) significantly ($p<0.001$) reduced in comparison to baseline and post test conditions of both Extensive Interval Training Group (EITG) and Intensive Interval Training Group (IITG) which indicated that both type of interval training improved resting heart rate (RHR) and Peak Exercise Heart Rate (PEHR) more or less. The result supports the findings (4) It also showed that the mean difference (Pre test ~ Post test) of EITG was higher than IITG indicated that extensive interval training had greater positive impact on Resting Heart Rate (RHR) and Peak Exercise Heart Rate (PEHR) than intensive interval training. In respect of RHR & PEHR the result is contradictory to the other findings (5, 6, and 7)

In case of VO_2 Max significant difference ($p<0.001$) was observed in comparison to pre and post test conditions of both Extensive Interval Training Group (EITG) and Intensive Interval Training Group (IITG) which indicated that both type of interval training improved maximum oxygen uptake ability and supports the findings of Chidambara Raja, 1994, and Parameswari, G. & Elayaraja, M, 2010.

The maximum oxygen uptake is a measure of the maximum exercise capacity thus is a dominant factor of good performance in almost all endurance events. It also showed that the mean difference (Pre test ~ Post test) of EITG was higher than IITG indicated that extensive interval training had greater positive impact on VO_2 Max than intensive interval training.

In the present study for FBGL significant difference observed ($p<0.001$) between the pre and post test condition of the IITG but the difference was not statistically significant for EITG though each training in both group improved fasting blood glucose level. So from the stand point of the improvement of FBGL the result gone in favor of intensive interval training which supports the finding of Karstoft K. et al. (2012) and

Conclusions

The results of the study showed that both type scientifically structured interval training had a positive impact on Resting Heart Rate (RHR), Peak Exercise Heart Rate (PEHR), Cardiorespiratory fitness in terms of maximum oxygen uptake (Vo_2 max), and Fasting Blood Glucose Level (FBGL). Result also showed that extensive interval training had grater positive impact on Resting Heart Rate (RHR), Peak Exercise Heart Rate (PEHR), and cardiorespiratory fitness in terms of maximum oxygen uptake (Vo_2 max) than intensive interval training. On the other hand intensive interval training had grater positive impact on Blood Glucose Level (FBGL) than extensive interval training.

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A Comparative Study On Selected Physical AnthropometricAnd Psychological Variables Of National Level Kho-Kho And Kabaddi Players In India

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Abstract
The purpose of this study was to compare selected physical, anthropometric and psychological variables of national level women Kho-Kho and Kabaddi players in India. Thirty Kho-Kho and thirty Kabaddi players of total sixty players (N=60) were selected as subject. All the subjects were represented national championship as a member West Bengal state team. The age group of the subjects were ranged from (11 – 14) years. In the present study three types of variables were selected viz. i) anthropometric variables - Height, Weight, Body Mass Index (BMI) and Percent Body Fat ii) Physical fitness variables - Speed, Explosive Leg Strength, Cardio-respiratory Endurance, Agility and Flexibility iii) Psychological variables - Self confidence, Dominance, Introversion, Neuroticism and Sociability. In the present study height and weight were measured by anthropometric rod and digital weighing machine respectively. Body Mass Index (BMI) was calculated as a person's *Body Mass* in kilograms divided by the *squared Height* in meters i.e. in kg/m^2. Percentage of body fat was calculated through Bio-Impedance-Analyzer (BIA) machine (Tanita^{TM}, Model: BC-554). Physical fitness variables, Speed, Explosive Leg Strength, Cardio-respiratory Endurance, Agility and Flexibility were measured respectively by 30m sprint, Sergeant Jump, Harvard Step Test, 4 X 10m. Shuttle Run test and Sit and Reach Test. Psychological variables - Self confidence, Dominance, Introversion, Neuroticism and Sociability were measured by Burn-Reuter personality inventory questionnaire.
Mean and standard deviation of each variable were calculated. The means of respective variables between two games were compared by using t-test. Statistical significance was tested at 0.05 level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used. The results of the study showed that I) *Height, Weight, BMI and % body fat* of the Kabaddi players were significantly higher than the Kho-Kho players. II*) Speed, Explosive Leg Strength, Cardiorespiratory Endurance* and *Agility* of the Kho-Kho players were significantly higher than the Kabaddi players. III) There was no significant difference in *Flexibility* between the Kho-Kho and Kabaddi players. IV) In *Self Confidence* and *Dominance* Kabaddi players had significantly higher value than the kho-kho players. V) But no significant differences were found in *Introversion, Neuroticism* and *Sociability* between the Kho-kho and Kabaddi players.
Key words: BMI, % Body Fat, Speed, Explosive Leg Strength, Cardiorespiratory Endurance, Agility, Self-Confidence, Dominance, Introversion, Neuroticism, Sociability

Introduction
For performance excellence, in any activity, Anthropometric measurements, Physical fitness and psychological profiles of sports participants are three important factors besides technical & tactical efficiency and intellectual soundness. It is a well known fact that players, of one game differ from the players of other games in their body measurement, physical fitness levels and personality traits (Carrom 1980). It is also true that the fitness quality required for playing large area games like football, rugby, and hockey differed from that of the small area games like Basketball, Handball, kho-kho, Kabaddi etc. Kho-Kho and Kabaddi are two very popular games in the south Asian countries today. Both the game has a rapid increasing trend of popularity in the western countries and few American and African countries as well. Both the games are considered as small area games. The games are simple in nature, easy to organize and less expensive, hence, reach to common men. Both games required less equipment. Kabaddi is most aggressive and highly body contact game, but Kho-Kho is a semi contact game. Both games differ from each other in their nature, skill, techniques and strategies etc. So, there are some similarity and dissimilarity as well between Kho-Kho and Kabaddi. Now the question is that how much difference exists between the Kho-Kho and Kabaddi players in Anthropometric measurement, Physical fitness and psychological profiles? The researchers were interested to investigate the above question. Accordingly the present project was planned to gather information about Anthropometric measurements,

Methods & Materials

Thirty national level female Kho-Kho players and thirty national level female Kabaddi female players, representing west Bengal in national championship, were selected as the subjects of the present study. So the total no of subjects for the study were sixty [N=60]. They were in the age group of 11 – 14years. In the present study three types of variables were selected viz. i) anthropometric variables - Height, Weight, Body Mass Index (BMI) and Percent Body Fat ii) Physical fitness variables- Speed, Explosive Leg Strength, Cardio-respiratory Endurance, Agility and Flexibility iii) Psychological variables - Self confidence, Dominance, Introversion, Neuroticism and Sociability. Body mass was measured by digital weighing machine. The measurement was taken in kilogram up to 0.01 kg level of accuracy. The Height was measured by anthropometric rod. The measurement was taken in centimeter. The accuracy of measurement was up to 0.1 cm. Body Mass Index (BMI) was calculated as a person's *Body Mass* in kilograms divided by the *squared Height* in meters i.e. in kg/m^2. The equation was as follows: [B.M.I**=** Body Mass in kilograms**. /** (Height in meters)^2**].** Percentage of body fat was measured by Bio-Impedance-Analyzer (BIA) machine (Tanita**TM**, Model: BC-554). Physical fitness variables, Speed, Explosive Leg Strength, Cardio-respiratory Endurance, Agility and Flexibility were measured respectively by 30m sprint, Sergeant Jump, Harvard Step Test- Physical Efficiency Index, 4 X 10m. Shuttle Run test and Sit and Reach Test. The speed was calculated by the formula: [Speed = Distance in meter / Time in second i.e. in m/sec]. The Physical Efficiency Index from the pulse rate was calculated by the formula: [PEI = (Duration of exercise in second x 100) / (2 x sum of pulse count in recovery)]. Psychological variables - Self confidence, Dominance, Introversion, Neuroticism and Sociability were measured by Burn-Reuter personality inventory questionnaire. Mean and standard deviation of each variable were calculated. The means of respective variables between two games were compared by using t-test. Statistical significance was tested at 0.05 level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used.

Results In **Table-1** the mean and standard deviation of obtained data belonging to anthropometric, physical and psychological variables as measured and calculated by different tools and techniques of kho-kho and Kabaddi players have been presented.

Table 1

Mean and Standard Deviation of the groups in different Anthropometric, Physical and Psychological variables.

NAME OF THE VARIABLES		KHO-KHO (Mean ± SD)	KABADDI (Mean ± SD)
	Age(year)	12.62 ± 01.53	12.84 ± 0 1.32
	Height(cm)	139.23 ± 03.00	142.44 ± 03.89
	Weight(kg)	36.22 ± 02.00	40.37 ± 03.37
	BMI	18.7 ± 01.44	19.9± 01.78
	Body fat %	16.31 ± 01.66	19.06 ± 01.48
Physical	Speed; (m/sec.)	05.42 ± 0.33	04.97 ± 0.46
	Explosive Leg Strength; Vertical jump(cm.)	38.79 ± 03.03	34.54 ± 03.66
	Cardio respiratory Endurance; (P.E.I)	96.28 ± 09.93	83.46 ± 10.09
	Agility; 4X10 m. Shuttle Run(sec.)	08.21 ± 01.01	09.48± 01.04
	Flexibility; Sit-and-reach (cm)	27.57 ± 05.06	29.25± 05.09
	Self confidence	- 38.09 ± 20.16	- 19.82 ± 28.45
	Dominance	9.82 ± 20.88	22.82 ± 11.42
	Introversion	- 12.64 ± 10.56	- 8.55 ± 9.63
	Neuroticism	- 15.82 ± 16.67	- 10.0 ± 21.99
	Sociability	- 16.73 ± 7.60	- 22.73 ± 19.40

In **Table-2** the mean and standard deviation and **t-ratio** of the anthropometric variables (Height, Weight, BMI, and % Body fat) have been presented. From the table-2 it was found that statistically significant difference existed at 0.05 level of confidence between kho-kho and Kabaddi players in all the anthropometric variables. The table shows that the Height, Weight, BMI and % body fat of the Kabaddi players were significantly higher than the Kho-Kho players.

Table 2
Mean and Standard Deviation and t-ratio of the Anthropometric variables of Kho-Kho and Kabaddi players.

Statistics	Height (cm)		Weight (kg)		BMI		Body fat %	
	Kho-Kho	Kabaddi	Kho-kho	Kabaddi	Kho-kho	Kabaddi	Kho-kho	Kabaddi
Mean	139.23	142.44	36.22	40.37	18.7	19.9	16.31	19.06
S.D.	03.00	03.89	02.00	03.37	01.44	01.78	01.66	01.48
t-ratio	*3.5731		*5.7932		*2.87		*6.76	

Table value of 't' for df (58) at 0.05 level of confidence = 2.0017

In **Table-3** the mean and standard deviation and **t-ratio** of the Physical fitness variables (Speed, Explosive leg strength, Cardiorespiratory Endurance, Agility and Flexibility) have been presented. From the table-3 it was found that statistically significant difference existed at 0.05 level of confidence between kho-kho and Kabaddi players in all the Physical fitness variables (Speed, Explosive leg strength, Cardiorespiratory Endurance and Agility) except Flexibility. Table-3 also shows that the Speed, Explosive Leg Strength, Cardiorespiratory Endurance and Agility of the Kho-Kho players were significantly higher than the Kabaddi players.

Table- 3
Mean and Standard Deviation and t-ratio of the Physical fitness variables of Kho-Kho and Kabaddi players.

Statistics	Speed (m/sec.)		Explosive Leg Strength (cm.)		Cardiorespiratory Endurance (P.E.I)		Agility (sec.)		Flexibility (cm)	
	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi
Mean	05.42	04.97	38.79	34.54	96.28	83.46	08.21	09.48	27.57	29.25
S.D.	0.33	0.46	03.03	03.66	09.93	`10.09	01.01	01.04	05.06	05.09
t-ratio	*4.2487		*4.9109		*4.9601		*4.7826		1.2779	

*** Table value of 't' for df (58) at 0.05 level of confidence = 2.0017**

In **Table-4** the mean and standard deviation and t-ratio of the Psychological variables (Self-confidence, Dominance, Introversion, Neuroticism and Sociability) have been presented. From the table-4 it was found that statistically significant difference existed at 0.05 level of confidence between kho-kho and Kabaddi players in Self-confidence, Dominance. But there was no significant difference observed between kho-kho and Kabaddi players in Introversion, Neuroticism and Sociability. Table-4 also shows that in Self Confidence and Dominance Kabaddi players had significantly higher value than the kho-kho players.

Table -4 Mean and Standard Deviation and t-ratio of the Psychological variables of Kho-Kho and Kabaddi players.

Statistics	Self confidence		Dominance		Introversion		Neuroticism		Sociability	
	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi	Kho-Kho	Kabaddi
Mean	-38.09	-19.82	9.82	22.82	-12.64	-8.55	-15.82	-10.0	-16.73	-22.73
S.D.	20.16	28.45	20.88	11.42	10.56	9.63	16.67	21.99	7.60	19.40
t-ratio	*2.8699		*2.9919		1.5675		1.1552		1.5773	

*** Table value of 't' for df (58) at 0.05 level of confidence = *2.0017**

Discussion

The purpose of conducting the present study was to investigate the differences in selected anthropometric, physical and psychological variables between kho-kho and Kabaddi players. The results of the present study shows that in some anthropometric, physical and psychological variables significant differences exist between kho-kho and Kabaddi players. Again in few anthropometric, physical and psychological variables no significant differences were recorded between kho-kho and Kabaddi players. The result of the study may be explained that the sports performance in different games depends on various factors among of them anthropometric measurement, physical fitness and psychological characteristics plays a crucial role. The Kabaddi players in the present study were taller and heavier than the Kho-kho players. The significant difference in anthropometric variables (Height, Weight, BMI, and % Body fat) may perhaps be resulted due to that structural difference between the Kho-Kho and Kabaddi players represented as subjects of the present study. In Speed, Explosive Leg Strength, Cardiorespiratory Endurance and Agility the parametric values of the Kho-Kho players were significantly higher than the Kabaddi players but in flexibility no significant difference was observed. The possible explanations for these results may be due to the fact that the movement pattern observed in Kho-Kho is rapid, quick & faster, durative, and frequently changeable in movement direction that required more speed, leg strength, circulorespiratory endurance and agility than in Kabaddi which is basically a game that dominated by muscular strength. On the other hand both the game demands almost same degree of joints mobility may be a cause of no significant difference in flexibility between the games. Again in Self Confidence and Dominance Kabaddi players had significantly higher value than the kho-kho players. But no significant differences were found in Introversion, Neuroticism and Sociability between the Kho-kho and Kabaddi players. These results may be explained by the fact that Kabaddi is a highly body contact game, it requires more aggressive behavior and physical challenge taking ability, the players have more muscular power and larger body shape and size than the kho-kho players that may influence their psychological traits (*Self Confidence* and *Dominance*) positively. The others psychological traits show no difference which may be due to the fact that these variables were influenced less by the bodily characteristics of the players. Kabaddi and Kho-Kho both are team game requires more mental interactions and exposures of group living among the players in and outside the playfield may also be a cause of no significant difference in Introversion, Neuroticism and Sociability between the players of the two games.

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Cardo-Respiratory Endurance And Breath Holding Time

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Abstract
The purpose of the present study was to find the effect of different fitness training programmes on cardio-respiratory endurance and breath holding time. For this purpose, thirty boys those who were studying in various schools and aged between 16 and 17 years from Andaman and Nicobar Islands, were selected. They were divided into three equal groups, each group consisted of ten subjects, in which group – I underwent interval training, group – II underwent circuit training and group – III acted as control group who did not participate in any special training. The training period for this study was three days in a week for twelve weeks. Prior to and after the training period the subjects were tested for cardio-respiratory endurance, and blood breath holding time. The selected criterion variables were tested with Cooper's twelve minutes run/walk test and holding the breath for maximum duration in seconds. The statistical tool applied for the present study was Analysis of Covariance (ANCOVA). Since, three groups were involved, the Scheffé *S* test was applied as post-hoc test. From the results of the study, it was concluded that both the trainings, i.e. interval training and circuit training, has improved the cardio-respiratory endurance and breath holding time.

Introduction
The word 'training' is used in it's broad sense and it's meaning varies with the field of application. In sports, the word training is generally understood to be a synonym of doing physical exercises. In it's narrow sense, training is doing synonyms of physical exercises for the improvement of performance.Sports training aims at achieving high performance in the future. Therefore the stinoture of prognostic sports performance should form the basis of formulation of training. All aims, objectives, means, methods and measures for different stages of training are to be derived from the performance capacity essential to achieve the prognostic sports performance. The performance structure in combination of other factors like motor development, age, training, state, periodization etc., determines the training structure.Interval training is an excellent way to burn more calories, build endurance quickly and make workouts more interesting. Interval training involves alternating high intensity exercise with recovery periods and there are a variety of ways to set up interval workouts. One option is measured by periods of work followed by measured periods of rest. An example would be 1 minute of high intensity work (such as a sprint), followed by 2 minutes of low intensity exercise (e.g., walking) and alternating several times for 15-30 minutes.Circuit training was developed by R.E. Morgan ,G.T. Anderson in 1957 at the University of Leeds in England. The term circuit refers to a number of carefully selected exercises arranged consecutively. In the original format, 9 to 12 stations comprised of the circuit. This number may vary according to the design of the program. Each participant moves from one station to the next with little (15 to 30 seconds) or no rest, performing a 15 to 45 second work bout of 8 to 20 repetitions at each station (using a resistance of about 40% to 60% of one-repetition maximum). The program may be performed with exercise machines, hand-held weights, elastic resistance, calisthenics or any combination.

Methods:
This study under investigation involved the experimentation of interval training and circuit training on cardio-respiratory endurance and breath holding time. For this purpose, thirty male students those who were studying in various schools, and aged between 16 and 17 years from Andaman and Nicobar Islands, were selected. The selected thirty subjects were randomly divided into three equal groups of ten each, out of which group - I (n = 10) underwent interval training, group - II (n = 10) underwent circuit training and group - III (n = 10) remained as control. The training programme was carried out for three days per week for twelve weeks. Cardio-respiratory endurance was measured by administering Cooper's 12 minutes run/walk test and breath holding time was assessed by holding the breath for maximum duration in seconds.

Analysis Of Data

The data collected prior to and after the experimental periods on cardio-respiratory endurance and breath holding time on interval training group, circuit training group and control group were analysed and presented in the following table -I.

Table – I

Analysis of Covariance and 'F' ratio for Cardio-respiratory Endurance and Breath Holding Time of Interval Training Group, Circuit Training Group and Control Groups

Variable Name	Group Name	Interval Training Group	Circuit Training Group	Control Group	'F' Ratio
Cardio-respiratory Endurance (in Meters)	Pre-test Mean ± S.D	1237.0± 21.1	1225.0 ± 17.2	1238.0 ± 13.2	1.72
	Post-test Mean ± S.D.	1250.0 ± 18.9	1279.0 ± 17.9	1232.0 ± 17.2	17.17*
	Adj. Post-test Mean	1247.105	1285.579	1228.315	53.18*
Breath Holding Time (in Seconds)	Pre-test Mean ± S.D	32.40 ± 0.966	31.70± 0.949	31.80 ± 1.135	1.377
	Post-test Mean ± S.D.	33.50 ± 1.434	34.80 ± 1.317	31.70 ± 1.252	13.575*
	Adj. Post-test Mean	33.226	34.969	31.806	17.618*

*** Significant at .05 level of confidence.**

(The table value required for significance at .05 level of confidence with df 2 and 27 and 2 and 26 were 3.35 and 3.37 respectively).

Further to determine which of the paired means has a significant improvement, Scheffĕ *S* test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table - II

Scheffĕ S Test for the Difference Between the Adjusted Post-Test Mean of Cardio-respiratory Endurance and Breath Holding Time

Adjusted Post-test Mean of Cardio-respiratory Endurance				
Interval Training Group	Circuit Training Group	Control Group	Mean Difference	Confidence interval at .05 level
1247.105		1228.315	18.79*	13.8987
1247.105	1285.579		38.474*	13.8987
	1285.579	1228.315	56.264*	13.8987
Adjusted Post-test Mean of Breath Holding Time				
53.226		51.806	1.42*	1.386
53.226	54.969		1.743*	1.386
	54.969	51.806	3.163*	1.386

*** Significant at 0.05 level of confidence.**

Results

Before applying the experiment all the subjects of the interval training, circuit training and control groups attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on cardio-respiratory endurance and breath holding time. After twelve weeks of training the post-test was conducted one day after the training period to find out the changes in the criterion variables.

The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since there was three groups were involved in this study, the Scheff *S* test was used as pos-hoc test and it is shown in Table - II.

After applying the analysis of covariance, the result of this study showed that there was a significant difference among interval training group, circuit training group and control group in cardio-respiratory endurance and breath holding time after twelve weeks of training. The criterion variables such as, cardio-respiratory endurance and breath holding time was improved for both the interval training group and circuit training group.

Further, comparing the adjusted post-test means of all the criterion variables, such as, cardio-respiratory endurance and breath holding time both the training groups were significantly increased the performance after twelve week training period, when compared with the control group. Moreover, the circuit training group has better improvement on both the criterion variables than the interval training group.

Conclusions

It was concluded from the results of the study that the cardio-respiratory endurance and breath holding time has improved for both the experimental groups, such as interval training group and circuit training group, when compared with the control group.

Moreover the result of the study also shown that there was a significant difference was occurred between the training groups, in which, circuit training have better improvement than the interval training group.

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Effect Of Aerobic And Anaerobic Training On Total Cholesterol And Hematocrit

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Abstract
The purpose of the study was to find out the effect of aerobic training and anaerobic training on total cholesterol and hematocrit. To achieve this purpose, 30 male students studying in the Faculty of Agriculture, Annamalai University, studying in various classes was randomly selected as subjects. The age of the subjects ranged from 19 to 25 years. The subjects were divided into three equal groups of 10 subjects each in which group - I underwent aerobic training (continuous running), group – II underwent anaerobic training (interval running) and group - III acted as control that did not undergo any training programme. The training period for the study was three days (alternative days) per week for twelve weeks. The training was conducted only in the morning session between 6AM and 8 AM. The selected criterion variables such as total cholesterol and hematocrit were assessed before and after the training period. To assess the total cholesterol, Boehringer Mannheim kit was used and to assess hematocrit, Cyanmethematocrit method was used. The collected data were statistically analysed by using Analysis of Covariance (ANCOVA). Since, there were three groups involved in the present study, Scheffé *S* test was used as post-hoc test, to find out which of the paired mean was significantly differ. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as appropriate. It was concluded from the results of the study, there was a significant decrease in total cholesterol only for aerobic training group and not in anaerobic training group and a significant reduction in hematocrit was found for both the training groups when compared with the control group.

Key Words: aerobic training, anaerobic training, total cholesterol, hematocrit, ANCOVA, Scheffé S post-hoc test.

Introduction

The sports performance in international competitions and tournaments not only denotes the high level of efficiency of an individual sportsman but also gives expression to the over all efficiency of a nation, society and culture to which he or she belongs. The countries which win the greater number of medals in Olympics (the maximum number of medals per unit of their population) have better political, economical, social and cultural conditions, which are indispensable for producing world champions (***Hardayal Singh, April 1984***).

The word training means difference things in different fields. In sports the word training is generally understand to be a synonyms doing physical exercise. In a narrow sense, training is doing anaerobic training for the improvement of performance. This concept is reflected in worlds for terms which give a separate methods of procedures of doing physical exercise. Sports medicine and exercise physiology also understand training to be doing anaerobic training for improvement of performance (***Hardayal Singh, 1986***).

Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition (***Hardayal Singh, 1986***).Aerobic exercise (also known as cardio) is anaerobic training of relatively low intensity that depends primarily on the aerobic energy-generating process (***Plowman and Smith, 2007***). Aerobic literally means “living in air”, and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism (***McArdle, Katch and Katch, 2007***). Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time.

The word 'anaerobic' literally means without oxygen. Anaerobic exercise means you're working at such a high level of intensity, that the cardiovascular system can't deliver oxygen to the muscles fast enough. Because muscles need oxygen to continue exercising, anaerobic exercises only last for short periods of time. (http://exercise.about.com/od/cardioworkouts/g/anaerobic.html)

Methods

This study involve the experimentation of aerobic training and anaerobic training on total cholesterol and hematocrit. Only male students from Faculty of Agriculture, Annamalai University and aged between 18 and 25 years were selected. The selected forty-five subjects were randomly divided into three groups of ten each, out of which group - I (n = 10) underwent aerobic training, group - II (n = 10) underwent anaerobic training and group – III (n = 10) remained as control. The training programme was carried out three days per week during morning session only (6 am to 8 am) for twelve weeks. Total cholesterol was measured by using Boehringer Mannheim kit and hematocrit was measured by using Cyan Methematocrit method.

Analysis Of Data

The data collected prior to and after the experimental periods on total cholesterol and hematocrit on aerobic training group, anaerobic training group and control group were analysed and presented in the following table - I.

Table – I
Analysis of Covariance and 'F' ratio of Total Cholesterol and Hematocrit on Aerobic Training Group Anaerobic Training Group and Control Groups

Variable Name	Group Name	Aerobic Training Group	Anaerobic Training Group	Control Group	'F' Ratio
Total Cholesterol (in mg/dl)	Pre-test Mean ± S.D	182.10 ± 5.99	183.50 ± 6.21	181.40 ± 5.48	0.328
	Post-test Mean ± S.D.	179.90 ± 5.90	184.90 ± 6.14	181.60 ± 4.88	2.015
	Adj. Post-test Mean	180.120	183.802	182.472	26.195*
Hematocrit (gm/dl)	Pre-test Mean ± S.D	43.20 ± 1.55	43.60 ± 2.41	42.70 ± 2.31	0.45
	Post-test Mean ± S.D.	41.40 ± 1.78	42.20 ± 2.44	43.80 ± 2.201	3.210
	Adj. Post-test Mean	41.367	41.776	44.256	70.282*

*** Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 27 and 2 and 26 were 3.35 and 3.37 respectively).**

Further to determine which of the paired means has a significant improvement, Scheffĕ *S* test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table - II
Scheffĕ S Test for the Difference Between the Adjusted Post-Test Mean of Total Cholesterol and Hematocrit

Adjusted Post-test Mean of Total cholesterol				
Aerobic training Group	**Anaerobic training Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
180.120		182.472	2.682*	1.33395
180.120	183.802		3.682*	1.33395
	183.802	182.472	1.33	1.33395
Adjusted Post-test Mean of Hematocrit				
41.367		44.256	2.889*	0.677006
41.367	41.779		0.412	0.677006
	41.779	44.256	2.447*	0.677006

* Significant at 0.05 level of confidence.

Results

Before applying the experiment all the subjects of the aerobic training, anaerobic training and control groups were attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on total cholesterol and hematocrit. After twelve weeks of training the post-test was conducted one day after the training period to find out any changes in the criterion variables.

The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since there were three groups were involved in this study, the Scheff *S* test was used as pos-hoc test and it is shown in Table - II.

After applying the analysis of covariance, the result of this study showed that there was a significant difference among aerobic training, anaerobic training and control groups on the changes in total cholesterol and hematocrit after twelve weeks of training. The criterion variables such , total cholesterol and hematocrit were reduced after the training period. Further, comparing the adjusted post-test means to find out which of the group have significant reduced the total cholesterol and hematocrit, there was a significant difference was found between the training groups, in which, aerobic training group significantly decreased when compared with the anaerobic training group and control group and there was no significant reduction in total cholesterol after the anaerobic training. **Guo** *et al* **(2001)** and **Ghanbari Niakil (2005)** found that there was a significant reduction in total cholesterol after the aerobic training. **Kipreos, Tripolitsioti and Stergioulas (2010)** also found that the male athletes of anaerobic activity also have higher value of total cholesterol. **Musa** *et al* **(2009)** found that there was no significant reduction in total cholesterol after the high intensity interval training In hematocrit, both the training groups were significantly decreased after the training period, when compared with the control group. But, there was no significant variations was found between the training groups. **Moosavizademonir (2011)** found that there was a significant decrease in hematocrit after eight weeks of aerobic training. **Ibis, Hazar and Gokdemir (2010)** also found that there was no change in hematocrit after the aerobic exercise Overall findings shows that there was a significant positive alteration on total cholesterol in aerobic training and not in anaerobic training and in hematocrit, it was found that there was a significant reduction after the aerobic training and anaerobic training.

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Information Technology for Sports Management

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Introduction

This article will address the topic of information technology for sports management and will attempt to provide an overview of how information technology (called IT) is changing the nature of management practices in sport. The discussion of IT applications in the profession can be done in a few broad areas: 1st How the tools of today's "technological revolution" can be applied to the administration of sport. 2nd How developments such as the Internet and world wide web help in specific management functions such as training and marketing 3rd How e-commerce can make participation in sports more available through lower priced equipment and lastly, 4th The digital divide: and underlying condition that keeps some from participating fully in the benefits in the IT revolution.

The Technological Revolution

We are living in the midst of one of those very unusual occurrences that come along once every few generations: a society wide paradigm shift. The close of the last millennium has seen a fundamental change that is moving society the age of industry to the age of information. The currency in this new society that is being formed is information and the medium of exchange is called IT (and sometimes computer technology - CT). IT is simply the tools and methods used for the identification, organization and manipulation of facts that we call data. IT has become the engine that is driving all sectors of today's economy be it industry, government, education or indeed, sports.The most important piece of equipment that lies at the heart of the whole IT process is the computer. The computer and the software that it runs is an essential element in the new societal paradigm and it is a key to success for the modern sports manager. It is THE piece of equipment that allows the sports administrator to maximize the return on scarce resources whether this is people, facilities and equipment or finances. In turn, it is also perhaps the single most important tool to the sports administrator to extend the reach of sport and recreational programming to as many potential participants as possible.Just as money has been the currency and a source of power in the old paradigm, information is the currency and a source of power in the new paradigm. Nowhere is the old saying "that knowledge is power" more true than in a society where information or data is the force that drives the new economy. The secret to managing knowledge and information is in the development and maintenance of computer databases. A database is nothing more than an organized collection of common records that can be searched, accessed and modified. Database software is very widespread as most standard office computer software packages will typically have a simple database program in addition to word processing, spreadsheet and presentation applications.There is, however, a far more powerful and useful kind of database for sport managers than the one that comes in the standard software suite: the relational database. A relational database is a data management system that stores information in a series of tables consisting of rows and columns of data. When the operator conducts a search, a relational database allows the individual to match data from one table with data from a second to produce a third table or a report.From the foregoing the value of using IT tools can be readily seen for the organization of a competition. These tools are even more important for the day-to-day operation of the sport organization as can be seen by the kinds of sport program information that can be contained within these databases: First are athlete specific information such as team rosters that include biographic information including name, sex, age, contact information and even clothing sizes for team uniforms. The same database may also contain details on medical conditions, performance history, or other participation characteristics of the athletes.

Databases are also essential for other types of administrative information. Examples include accounting and business records, employee files, equipment inventories or facility maintenance records. The organizational marketing information system (MIS) is also typically a database program in which are tracked information such as season ticket sales, gate receipts or merchandising sales. It is particularly useful if different software applications interface with each other seamlessly which is to say, "do the programs talk to each other?" Can, for example, the data entered in the MIS resulting from ticket sales be imported directly to the accounting program?

To be effective, databases can and should be regularly updated to record changes. Bear in mind that the passage of time presents a more comprehensive picture of most activities and the ability to record change and make sense of it is essential for long term survival. Further, there is nothing so constant as change, particularly in sports organizations, and a well thought out and maintained database is a great way to develop and maintain an "institutional memory"; a record of those changes and the impact they have had on the organization.

As great as databases are for effective sport program management, the real power of information technology comes when individual computers are tied together through the medium of a network. This is truly a case where there are synergies created as in 2 + 2 = 6. A computer network simply is the hardware and software required to connect two or more machines together so to allow the sharing of data and other resources. Most larger enterprises, use computer networks to link together their operatives in a common computing environment. All of the permeations and configurations available to the sports administrator are clearly beyond the scope of this presentation except to note that the most common configuration of these kinds of networks are of the client - server variety. This type of network is has a main server that houses most of the information and database files. The individual operatives access the server through their desktop terminals or workstations which are called clients.

The next consideration is that of hardware. What is the computer system configuration and computing capacity that the organization will need? Capacity should not be underestimated as a relational database can consume huge amounts of memory. So do other strategies that enhance organizational effectiveness such as moving data files off the hard drives of individual work stations and onto a file server on a computer network. Another crucial decision revolves around operating software. Standard vendor prepared software packages are usually developed on the basis of the lowest common denominator for a group of potential clients. It is not uncommon that only about 80% of an organization's needs are met by an off-the-shelf product. So the sport administrator is left with the choice of writing their own software programs or adapting organizational operating procedures to some degree around the software package. The former can be hugely time consuming, very expensive and the end result is not always assured. Generally, the more extensive the modification required for a software product, the more expensive the product becomes and the more difficult it will be to accommodate software upgrades from the vendor.

The Internet

It is important to note that computer networks need not be limited to a single site or facility. Wide Area Networks (WANs) can link together sports administrators located throughout a country. For example, all of the regional offices of a national sports governing body such as the National Football Association can be linked together regardless of their geographic location. All of the operatives so linked can share administrative and programming information and communicate with each other cheaply and efficiently through the medium of e-mail.

The computer network with which the public is most familiar is the Internet and the World - Wide - Web, known simply as "the Web", is what most people think of when we say the "the Internet". While the Internet has been around for decades going all the way back to ARPAnet in the 1960s, the Web is a comparatively new innovation first introduced in the mid 1990s. It is a digital medium which presents information in text, audio and graphics in a simple hyper-text computer language readable by a browser. This medium has simply exploded and today there are more than 15 million web addresses called Uniform Resource Locators (URLs), many with hundreds of individual pages on their sites. Thousands or applications for new URLs are received every week. The ways that the Web has changed society are almost too numerous to mention. Suffice to say it has become an extremely important medium of communication, education and commerce and its importance in these areas will only continue to grow in the future. In terms of communication, for example, USA Today which is the closest thing a national newspaper in America, gets more than three million visits per day. Some 60% of these visits are to its sports pages. In terms of education, the concept of "distributed learning" or "distance education" gains more adherents with every passing day. Through the U.S. Sports Academy, for example, one can do the entire course of study for an accredited Master of Sport Science degree through the Web without leaving their home. The same possibilities exist at the undergraduate level through the International Sports Academy.

But most significant at this juncture is the marketing and commerce applications of the web. There are virtually no professional sports teams in the United States that do not have a Website and most are linked together through networks of Websites coordinated through the various league offices. Just how tight these linkages are is driven in part by agreements between the league teams on activities such as revenue sharing for media broadcasting rights and merchandise sales. The Web is currently used by professional sports teams in ways that the developers of this technology never envisioned.

For example, there are no English language radio broadcasts in Montreal for the Montreal Expos professional baseball team. Fans wanting hear the play-by-play in English can only do so by calling up the team's Website and listen to it coming across as an audio feed. Another example of how deeply the Internet has penetrated professional sports is how some pro hockey teams now require their players to have e-mail addresses as a means to interact with both the team administration and their fans.

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E-Commerce

It is also appropriate to briefly examine how the web will change the sale and distribution of sporting goods which is central to running sport programs. The relative cost for sports equipment can be an issue for the profession, particularly in terms of trying to broaden the appeal of sport to the greatest number of participants. E-commerce through the Internet holds the potential for containing costs for sports equipment as illustrated by the following example. In the traditional model of manufacture and distribution through a sporting goods store, it is not uncommon for a tennis racquet which cost $40 to manufacture to be marked up as much as 300 to 400% to as much as $160 as it moves through various wholesalers and retailers in the distribution chain to a tennis player. With an e-commerce arrangement whereby the manufacturer can reach the player directly without going through middlemen, the mark-up in distribution can be reduced to as little as 50% of the traditional retail price resulting in a sale price to the end user of about $80. Very simply, the more middle men in a distribution chain, the greater the benefit derived to the end user from using e-commerce distribution. E-commerce is well on its way to becoming a force in the world economy as it serves to remove barriers both natural and artificial. The barriers that will vanish include those of time and space as well as national borders both physical and ideological. That this will occur is underscored by the fact that this year e-commerce will employ more than 2 million people and create a turnover in excess of $500 billion. By next year, the turn over is expected to pass $1 trillion.

Conclusion

In closing I would be remiss if I didn't call attention to one important problem: technological tools can be expensive, which has resulted in what we call in the United States the "Digital Divide". In the U.S., approximately 60% of American adults are connected to the Internet and are on-line. These users are largely from the upper and middle class and have the financial wherewithal to purchase computers and Internet services. It is a matter of great concern that the very people who stand to benefit the most from economies to be realized through information technology as outlined earlier in my discussion on e-commerce are the ones least able to afford it. It is the economically disadvantaged that are currently being left out of the IT revolution. This Digital Divide also transcends national borders. While 60% of American adults are connected to the Internet, only about 5% of the global population can make that claim. Some areas, Africa for example, are almost totally disconnected and can only be considered disadvantaged as a result. Herein lies the challenge for the future.

IT applications in sports management is dramatically changing the way that we do business. Thinking through how we can use this kind of equipment and these tools greatly enhances outcomes. The bottom line is that these IT tools are rapidly becoming a necessity for the sports administrator at whatever level in the sports hierarchy they are working.

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Effects Of Varied Pace Running On Anaerobic Capacities Of College Athletes

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Abstract

The purpose of the study was to investigate the effects of different packages of pace running on selected motor fitness of male college athletes. For the purpose of the study eighty subjects were selected at random from the Department of Physical Education,Visva-Bharati University. Three groups with 20 subjects in each were assigned to three experiments of variable pace namely Fast pace running, Medium pace running and Combined Pace running and the subjects were trained for six weeks. The forth group served as control. To analyse the data obtained from four different groups (3 experimental and 1 control), during pre and post test sessions, ANCOVA was computed. The findings revealed that all the subjects belonging to 3 experimental groups showed significant improvement in the selected motor fitness components of speed, agility and leg explosive power. However the Fast pace running group was better than the Medium pace running group and the Combined pace running group in improving speed.
Keywords: Varied Pace Running, Anaerobic capacity

Introduction

Continuous exercises with changing pace or speed is usually considered as a method of improving endurance in sports training. For the change of speed in a planned way changing pace is a strenuous method and can be used by trained sports persons. The selected motor components of speed, agility and leg explosive power may be improved by other methods. But it was deemed reasonable by the investigator to explore whether, and if so, how much Variable Pace Method can improve anaerobic capacities as designated by speed, agility and leg explosive power.

METHOD

Subjects: The study was formulated as a true random group design, consisting of pre test and post test of all the subjects. Eighty (n= 80) male college athletes from the Department of Physical Education, Visva-Bharati university were randomly assigned to four equal groups of twenty subjects each. The groups were assigned as experimental Group A, termed as Fast Pace Running Group; Group B, termed as Medium Pace Running Group; Group C, termed as Combined Pace Running Group and Group D termed as the Control Group. The intensity of stimulus of Fast pace running group and Medium pace running group was fixed as prescribed by Watts and Wilson (1964). Pre and post tests were conducted for all the subjects on selected motor fitness components i.e. speed, agility and power. The three experimental groups participated in their respective training programme of fast pace running, medium pace running and combined pace running for a period of six weeks where the control group D did not receive any specific treatment.

Criterion Measures: The variables chosen for the study were speed, agility and power. Speed was measured by 50 mts Das Test in 1/10th of seconds. Shuttle Run Test was adopted to measure agility in 1/10th of seconds. Power was measure by Standing Broad Jump Test in meters.

Statistical Technique: The data obtained from the subjects were treated statically employing the analysis of Covariance to compare the adjusted mean difference among the groups. The Scheffe's post hoc test was used to find out the significant difference of paired means.

Results And Discussion

Speed

As shown in Table 1, the pre test means, post test means and adjusted post test means were determined and analysis of covariance was computed and the obtained F value 44.282 was greater than the required value of 2.73 and hence it was accepted that the fast pace running, medium pace running and combined pace running training, significantly increase the speed of the subjects.

Table 1
Computation of Analysis of Covariance of Speed on different groups (seconds)

	Fast	Medium	Combined	Control	Sourance of Variance	Sum of Square	df	Mean Squares	Obtained F ratio
Pre-Test Mean	6.6065	6.5935	6.607	6.595	Between	0.0032	3	0.0011	0.015
					Within	5.312	76	0.0699	
Post-Test Mean	6.559	6.562	6.576	6.5925	Between	0.0141	3	0.0047	0.0689
					Within	5.1798	76	0.0682	
Adjusted Post-Test Mean	6.5531	6.5689	6.5696	6.5979	Between	0.0209	3	0.007	44.282*
					Within	0.0118	75	0.0002	
Mean Diff	0.0475	0.0315	0.0031	0.003					

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) = 2.73, 3 and 75 (df) = 2.73.*Significant

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table 2.

Table 2
Scheffe's Confidence Interval Test Scores on Speed(Seconds)

MEANS					Required C.I
Control	Combined	Medium	Fast	Mean Difference	
6.5979	6.5696			0.028	0.0113*
6.5979		6.5689		0.029	0.0113*
6.5979			6.5531	0.0448	0.0113*
	6.5696	6.5689		0.0007	0.0113
	6.5696		6.5531	0.0165	0.0113*
		6.5689	6.5531	0.0158	0.0113*

The post hoc analysis of obtained adjusted means proved that there was significant differences existed between Control Group (GD) and Fast Pace Running Group (GA); Control Group (GD) and Medium Pace Running Groups(GB) ; Control Group (GD) and Combined Pace Running Group(GC). This proved that six weeks pace running of any kind improves speed of college male athletes significantly. No significant difference was observed between Medium Pace Running (GB) and Combined Pace Running (GC). however4, Fast Pace Running Group (GA) improved significantly in speed while, compared with Medium (GB) and Combined (GC) Pace Running Groups.he findings of the present study corroborates with the findings of Uppal and Madcsoothan who said that 15 km/h treadmill training is better for the improvement of speed than 10 km/h treads mill training.

Agility

Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 7.8473 was greater than the required value of 2.73 and hence it was accepted that the fast pace running, medium pace running and combined pace running training, significantly increased the agility of the subjects.

Table 3
COMPUTATION OF ANALYSIS OF COVARIANCE OF AGILITY on different groups (Seconds)

	Control	Combined	Medium	Fast	Sourance of Variance	Sum of Square	df	Mean Squares	Obtained F ratio
Pre Test Mean	11.402	11.3905	11.391	11.386	Between	0.0028	3	0.0009	0.0015
					Within	46.407	76	0.6106	
Post Test Mean	11.3935	11.3705	11.3665	11.386	Between	0.0127	3	0.0042	0.007
					Within	46.354	76	0.6099	
Adjusted Post Test Mean	11.38388	11.3724	11.3679	11.36637	Between	0.0038	3	0.0013	7.8473*
					Within	0.012	75	0.0002	
Mean Difference	0.0085	0.02	0.0245	0.026					

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) = 2.73, 3 and 75 (df) = 2.73.*Significant

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table 4

Table 4
Scheffe's Confidence Interval Test Scores on Agility(Seconds)

MEANS					Required C.I
Control	Combined	Medium	Fast	Mean Difference	
11.3839	11.3724			0.0115	0.0115*
11.3839		11.3679		0.016	0.0115*
11.3839			11.3664	0.0175	0.0115*
	11.3724	11.3679		0.0045	0.0115
	11.3724		11.3664	0.006	0.0115
		11.3679	11.3664	0.0015	0.0115

Agility of male athletes improved significantly in all three experimental groups, namely GA, GB and GC while compared with Control Group (GD). However no significant difference was observed in agility while three experimental groups were compared with each other.

Result corroborates with the chatterjee and bandyopadhyay, who also said that this particular type of training programme did not produced and detrimental effect on 10 – 14 year old boys.

Leg Explosive Power

The statistical analysis comparing the initial and final means of leg explosive power due to fast pace running, medium pace running and combined pace running training on college male athletes is presented in Table 5.

Table 5
COMPUTATION OF ANALYSIS OF COVARIANCE OF LEG EXPLOSIVE POWER on different groups(meter)

	Control	Comb-ined	Medium	Fast	Sources of Variance	Sum of Square	df	Mean Squares	Obtai-ned F ratio
Pre Test Mean	2.173	2.174	2.175	2.1705	Between	0.0002	3	0.000074	0.0027
					Within	2.0801	76	0.0274	
Post Test Mean	2.166	2.179	2.182	2.1785	Between	0.003	3	0.001	0.0376
					Within	2.0282	76	0.0267	
Adjust-ed Post Test Mean	2.1661	2.1781	2.1802	2.1811	Between	0.0029	3	0.001	5.854*
					Within	0.0124	75	0.0002	
Mean Di-fference	0.007	-0.005	-0.007	-0.008					

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) = 2.73, 3 and 75 (df) = 2.73.*Significant

Taking into consideration of the pre test means, post test means and adjusted post test means were determined and analysis of covariance was done and the obtained F value 5.854 was greater than the required value of 2.73 and hence it was accepted that the fast pace running, medium pace running and combined pace running training, significantly increase the leg explosive power of the subjects.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table 6.

Table 6
Scheffe's Confidence Interval Test Scores on Leg Explosive Power(Meters)

MEANS					Required C.I	Significant
Control Group	Combined Pace	Medium Pace	Fast Pace	Mean Difference		
2.16612	2.17814			-0.012	0.0115	sig
2.16612		2.18015		-0.014	0.0115	sig
2.16612			2.18108	-0.015	0.0115	sig
	2.17814	2.18015		-0.002	0.0115	not sig
	2.17814		2.18108	-0.003	0.0115	not sig
		2.18015	2.18108	-0.0009	0.0115	not sig

Leg explosive power of male athletes improved significantly in all three experimental groups, namely GA, GB and GC while compared with Control Group (GD). However no significant difference was observed in leg explosive power while three experimental groups were compared with each other.Result corroborates with the chatterjee and bandyopadhyay, who also said that this particular type of training programme did not produced and detrimental effect on 10 – 14 year old boys.

Conclusions

Within limitations of this study, the following conclusions were drawn:

1) Three experimental groups, namely the Fast pace running group, Medium pace running group and Combined pace running group were significantly better than the Control group in all the selected motor fitness components of speed, agility and leg explosive power.
2) The Fast pace running group was the best in comparison to the medium pace and combined pace running groups in management of motor fitness component of speed.

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A Study Of Nature, Characteristics And Purpose Of Folk Games

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Introduction:

Education is a fostering, nurturing and cultivating process dealing with the all round development of the moral, intellectual and physical prowess's of the whole man. Education develops the abilities of individuals and growth of culture and morality.

Education should be broad based attending to the needs of the child at various stages of growth and to the development of right habits, attitudes and qualities of character to enable our young generation to share the responsibilities of democratic citizenship. The need of activities which develop recreational competency to enjoy leisure shall also be considered. A proper and wise use of leisure will enable an individual to attend to his work with a high degree of efficiency in brief, "Education is for behavior".

Modern educationists deem, play as one of the important media of education, play is the free, pleasurable, immediate and natural expression of the child. Children are happy at play because they get a sort of satisfaction immediately. Play to the child, when properly organized and directed during leisure time becomes recreation to the adult. Through play the child learns better, play is nature's prescribed course of education and helps the child to grow emotionally and intellectually.

Some of the games have been part and parcel of rural folk. We can see varieties of games prevalent in various cultures. Games have originated and continued according to climatic conditions and geographical factors.

In the Stone Age, men lived in groups and wandered from place to place. There used to be frequent fights among them. It is an established fact that these fights were real and natural. Scholars agree that under the above circumstances "Games of Skill" came into existence. The whole gamut of such games was termed folk games.

There are many advantages derived by a review and study of folk games. One can understand the social heritage of any culture, and nature/characteristics and purpose through the study of folk games. By a deep insight into the folk games in various countries of the world, we find that folk games have in them values of life and that these values have played a vital role in the growth and expansion of society and outlook of the people. Folk games reflect the social and cultural values of human life.

Folk games are the outcome of the happenings and experiences of man in his daily life. It is a special creative activity and a replica of life itself.

Thus while studying culture and civilization of a people or community we can understand and appreciate the way of life and cultural heritage of the people through a study of their games.

Because of the patronage, cultural impact, and propaganda offered to foreign activities, the native activities suffered a severe jolt. Folk games have moved from place to place from people to people and have thus lost their original form, spirit and importance beyond recognition.

Therefore a number of folklorists attempted to enumerate and describe the folk games prevailed with several peoples, which in turn helped in understanding their nature and characteristics besides unraveling the mysteries and purposes shrouding such activities. However, attempts by Indian folklorists to analyze the folk games are very rare. Therefore an attempt is made through this study to fill the void by way of literarily synthesis.

Statement Of The Problem:

The purpose of the study is to investigate the nature, characteristic and purpose of folk games, which have been reported by the writers and researchers.

Hypothesis:

It was hypothesized that the folk games did not serve any special purpose.

It was also hypothesized that the folk games did not develop any abilities in the participants.

Delimitations:

1. The study was delimited to the children's games.
2. The study was further delimited to children's games in India particularly in Karnataka state.
3. The study was delimited to the children's games reported in Doctoral thesis, Master's dissertations and books available in the libraries and institutions in Bijapur City.

Limitations:

1. Due to paucity of time, folk games of children were only considered.
2. Interpretation of data is done on the basis of available literature in the libraries of Karnataka University, Institute of Kannada Studies and University College of Physical Education.
3. Children's folk games prevalent in all societies are not covered due to obvious reasons.

Significance Of The Study:

The study will be significant as the following benefits are likely to accrue as a result of this investigation.

1. The study helps to sketch the characteristics, nature, and purpose of different folk games of children.
2. The study will motivate the future investigators to undertake similar studies to describe the characteristics and purposes of folk games of young and old.
3. The study will help to enrich the literature on folk games.

Methodology:

The main purpose of the present study was to investigate and describe the nature, characteristics and purposes of children's folk games. From the time immemorial a number of games were played by the peoples around the world. These games served a number of purposes. Although researchers in different parts of the world undertook studies about the folk games, exhaustive studies about their nature, characteristic, and purposes were not described in detail. Therefore the author of this study ventured to make a literary synthesis of the same, opting for children's games.

Folk games prevalent among children were reported by various authors in their books, articles, doctoral theses and dissertations. Such of those games which are reported by various authors in their works were studied by the researcher in detail and they were grouped according to their characteristic features as individual, dual, team, and mass games. They are classified as outdoor and indoor activities, with and without equipment activities, maintaining and sustaining activities. All these games have something to contribute and provide something to the individual. In this study the author lists the nature, characteristics and purposes of each of those activities.

The author scanned the available literature on children's folk games and noted that the nature, characteristics and purpose of some of the games were illustrated and some more games were simply listed. Such of those games which were described as to their nature and purpose were indicated with different symbols and the details about the source have also been given. Only for those activities for which information's like nature and purpose were not available, the author has ventured to provide in this study.

Types of folk games in which individuals of different age take part were presented in a tabular form by Hiriyanna.

Participants	Outdoor	Indoor
Children (7 To 8 Years)	Tag games, Tiger and Cattle, Hide and Seek,	Games of bangle pieces, koosumari, marriage games
Girls (7 Years and above)	Hopping Circle games	Channemane. Whirling, Blind mans game
Boys (7 Years and above)	Huthu thu, Gilli danda, Hitting the man with ball	Ball game
Adults	Ball games, Beating the coconut. Wrestling.	24

Analysis And Interpretation Of Data:

The purpose of study on hand is to describe the nature, characteristics and purpose of children's folk games. The games reported in different sources were listed and categorized as individual, pair (dual), team and mass activities as explained, of this study. The games for which the objective of this study has already been met with in earlier researches and works are merely mentioned in this study and for the remaining, nature characteristics and purposes are describe.

Table-1:Indoor Games and Recreational Activities of Boys

Nature	Game
Individual	Allu Maney ata, Urulugaliy ata and Haggada ata.
Pair	Chouka Bara, Chaduranga and Girigette ata.
Team	Antyakshari, Kusti and Hoo Annisuvudu.
Mass	Kalla Police ata, Bassu Biduva ata Hoo Annisuvudu, Kudure Juttu, Nagisuvudu and Avite Gummanata.

Table-2:Outdoor Games and Recreational Activities of Boys

Nature	Game
Individual	Galipata Harisuvudu. Urulugali ata, Hakki Goodu and Kattuvudu ata.
Pair	Kokke ata and Kusti ata.
Team	Chandata/Lagori. Kabaddi. Adda Kolu. Chinni Dandu. Muluguvudu and Kho-Kho.
Mass	Agasana ata. Buguri at. Chinni Dandu. Goli ata. Goni Cheeladata Game with creeper of Rope, Hambinata. Marakothi ata, Bijapur Chendu, Kudure Juttu. Mosale ata. Muluguvadu and Topi ata.

Table-3:Indoor Games and Recreational Activities of Girls

Nature	Game
Individual	Allu Maneyata and Hagada ata.
Pair	Achacho Belladacho, Chouka Bara. Chaduranga and Girigatte ata.
Team	Antyakshari. Appale Tippale.
Mass	Annekallu ata. Bala Chooru ata, Game of Cooking and Maduve ata.

Table-4 :Outdoor Games and Recreational Activities of Girls

Nature	Game
Individual	Allu Maneyata, Chouka Bara, Achacho Belladacho and Hakki Goodu Kattuvudu.
Pair	Girigatte ata, Kunte Bille and Achacho Belladacho.
Team	Kunte Bille, Haggada ata and Kho-Kho.
Mass	Haggada ata, Kunte Bille, Kukuru Basavi and Anki ata Avite Gummanata.

Conclusions:

The study revealed that the Nature, Characteristics and Purposes of 1) Avita Gummanata 2) Antyakshari 3) Anki ata 4) Appale Tippale 5) Bassu Biduvudu 6) Gombe ata 7) Goni Cheeladata 8) Hambinata 9) Kuniyava ata 10) Kannu Kattata 11) Madike Hodeyuvudu 12) Okuli Aata 13) Thingalu Belakinata 14) Galipata Harisuva ata 15) Kusti 16) Oduva ata 17) Garu Chendu were not described in the earlier studies. The void was filled by this study. The folk games of children served the purposes of physical development, development of agility, speed, strength, special perception, sharpness of mind, vision and audition, creativity, power of remembrance, aiming, social movement, the sense of judgment, neuro-muscular co-ordination, culture and tradition.On the basis of the above conclusions, the hypothesis that 'folk games of children served the purpose of only recreation' is rejected. It was concluded that folk games of children. It was concluded that folk games of children developed physical, physiological, social, emotional and cultural aspects among the participants.

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Development of the self-concept during adolescence

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Introduction:

One's **self-concept** (also called **self-construction**, **self-identity** or **self-perspective**) is a collection of beliefs about oneselfthat includes such things as academic performance, gender roles and sexuality, racial identity,[1] and many others.Self-concept presupposes but is distinguishable from self-awareness, which is simply an individual's awareness of their self (which "refers to the extent to which self-knowledge is clearly and confidently defined, internally consistent, and temporally stable"),and is also more general than self-esteem, which is a function of the purely evaluative element of the self-concept. The self-concept is not restricted to the present, as it includes past and future selves. Future or possible selves represent individuals' ideas of what they might become, what they would like to become, or what they are afraid of becoming. They correspond to hopes, fears, standards, goals, and threats. Possible selves may function as incentives for future behavior; they also provide an evaluative and interpretive context for the current view of self. The perception which people have about their past or future selves is related to the perception of their current self. Temporal self-appraisal theory argues that people have a tendency to maintain a positive evaluation of the current self by distancing negative selves and bringing close positive selves. In addition, people have a tendency to perceive the past self less favourably (e.g., I'm better than I used to be) and the future self more positively (e.g., I will be better than I am now).

Psychologists Carl Rogers and Abraham Maslow paved the way for this concept. According to Rogers, everyone strives to become more like an "ideal self". The closer one is to their ideal self, the happier one will be. Rogers also claimed that one factor in a person's happiness is unconditional positive regard, or UPR, from others. UPR often occurs in close or familial relationships, and involves a consistent level of affection regardless of the recipient's actions. Rogers explained UPR as neither approving nor disapproving of someone based on their behaviours or characteristics but rather accepting them without judgement. From a therapy frame of reference, Rogers identified the significance of a client perceiving a therapist's UPR towards them, so that the client would not feel judged as they attempt to accurately express themselves. Evidence of UPR in self-concept research is apparent in studies by Benner and Mistry (2007) and Tiedemann (2000). Research has indicated that adolescents whose mothers and teachers had high expectations for their future educational attainment experienced more academic success than those whose adult influences had lower expectations. Adults' high expectations for children are also reported as being important buffers from the negative effects of other parties' low expectations by developing feelings of positive regard in adolescents. In research about parent stereotypes, the correlation between parents' beliefs about their early elementary age children's' mathematics abilities and the children's actual abilities increased as children aged. This demonstrates the strong relationship between adults' beliefs about children and children's beliefs about themselves, indicating the importance of developing unconditional positive regard for students so they can develop it themselves.

An important theory related to self-concept is the self-categorization theory (SCT), which states that the self-concept consists of at least two "levels," a personal identity and a social identity. In other words, one's self-evaluation rely on both one's self-perceptions and how one fits in socially. The self-concept can alternate rapidly between the personal and social identity. Research by Trautwein et al.(2009) indicates that children and adolescents begin integrating social comparison information into their own self-concept in elementary school by assessing their position among their peers. Gest et al.'s (2008) research findings reveal that peer acceptance has a significant impact on one's self-concept by age 5, affecting children's behaviour and academic success. Both of these research examples demonstrate the social influences on a person's self-concept.

Models of Self-Concept

The self-concept is an internal model which comprises self-assessments. Features assessed include but are not limited to: personality, skills and abilities, occupation(s) and hobbies, physical characteristics, etc. For example, the statement "I am lazy" is a self-assessment that contributes to the self-concept. However, the statement "I am tired" would not be part of someone's self-concept, since being tired is a temporary state and a more objective judgment. A person's self-concept may change with time as reassessment occurs, which in extreme cases can lead to identity crises.

Another model of self-concept contains three parts: self-esteem, stability, and self-efficacy. Self-esteem is the "evaluative" component, in which one makes judgments about his or her self-worth. Stability refers to the organization and continuity of one's self-concept. Is it constantly in flux? Can singular, relatively trivial events drastically affect one's self-esteem? The third element, self-efficacy, is best explained as self-confidence. It is specifically connected with one's abilities, unlike self-esteem.

Academic self-concept

Academic Self-Concept (ASC) refers to the personal beliefs someone develops about their academic abilities or skills. A person's ASC develops and evolves as they age. Research by Tiedemann (2000) suggests that ASC begins developing in early childhood, from age 3 to 5, due to parental/family and early educators' influences. Other research contends that ASC does not develop until age 7 or 8, when children begin evaluating their own academic abilities based on the feedback they receive from parents, teachers and their peers. According to Rubie-Davis (2006), by age 10 or 11 children view their academic abilities by comparing themselves to their peers.

Due to the variety of social factors that influence one's ASC, developing a positive ASC has been related to people's behaviours and emotions in other domains of their life, influencing happiness, self-esteem, and anxiety levels to name a few. Due to the significant impact ASC has on a person's life, fostering positive self-concept development in children should be an important goal of any educational system.

These research findings are important because they have practical implications for parents and teachers. Research by Craven et al. (1991) indicates that parents and teachers need to provide children with specific feedback that focuses on their particular skills or expressed abilities in order to increase ASC. Other research suggests that learning opportunities should be conducted in a variety of mixed-ability and like-ability groupings that down-play social comparison because too much of either type of grouping can have adverse effects on children's ASC in the way they view themselves in relation to their peers.

Effects of Success and Failure

Various studies have examined the effects that success and failure can have on an individual's self-concept. Individuals often form their self-concept based on past experiences of success or failure, attributing the outcome to their own personal worth. By doing this, individuals can commit the fundamental attribution error. In this case, the error may arise when the person falsely believes that a specific aspect of who they are determined the positive or negative outcome. By attributing a negative outcome to oneself, self-concept can be unnecessarily harmed. However, attributing positive outcomes to oneself can increase self-concept. These attributions can even have an effect on self-perception, achievement behaviors in the future, and expectancies. Austin and Vispoel (1998) found strong links between where an individual attributed success or failure and, specifically, musical self-concept.

Changes in self-concept can be mediated and predicted by various factors. One important factor in academics is evaluation of performance by peers, or peer academic reputation (PAR). Gest, Rulison, Davidson, and Welsh (2008) found evidence for the predictive ability of PAR with regard to students' in upper grades academic self-concept. If a student has a reputation for success or failure in the academic setting, the student may develop a negative self-concept.This shows that it is may not only be the actual success or failure that has an effect, but may also be the secondary effects of poor academic reputation among peers that influence students' self-concept.

There are also effects that have been studying by looking at how self-concept can influence success or failure and attributions of success and failure. In a study of university undergraduate students, self-esteem was studied by examining students' attributions for their success or failure after being given a word association test. Dutton and Brown (1997) found that self-esteem could predict participants' attribution of their success or failure in the word test. Individuals with high self-esteem tended to make more self-serving attributions to outcomes than did individuals with low self-esteem.

Expectations, conditioning, and gauging

According to Kathleen Berger, author of *The Developing Person*, guilt plays a significant role in shaping a young child's self-concept. As an example, she describes a child that is coddled at home, and his/her socially unacceptable behavior is never thwarted by the parent(s). When the child is denied whatever they want from another child, he/she strikes out towards other children, not understanding that there will be consequences and possible retaliation. If this kind of behavior were to occur in a classroom environment, a teacher could use guilt in an attempt to shape the spoiled child's self-concept by reminding the student that hitting others is not acceptable in most social situations. In essence, guilt shapes behavior. Berger goes on to explain that most children over the age of 5 have some sense of the rules and regulations that govern social behavior that they learn from a guardian, thus shaping their self-concept without using guilt. In some cases, if maladaptive behavior is left unchecked, the seeds of bullying could start to germinate.

Self-concept is linked directly to a person's level of anxiety, according to the humanistic psychologist Carl Rogers. According to Rogers, if a child feels highly valued and wanted, that person is more likely to grow up with a positive self-image, with the possibility of becoming self-actualized. Rogers describes this individual as a *fully functioning person* with a low level of anxiety, which he attributes to inconsistencies between self-perceptions and possible-self. Here again, expectations play a major role in shaping self-concept. Dr. Rogers hypothesizes that psychologically healthy people actively move away from roles created by others' expectations but instead look within themselves for validation. "Neurotic and psychotic people, on the other hand, have self-concepts that do not match their experiences.. They are afraid to accept their own experiences as valid, so they distort them, either to protect themselves or to win approval from others."Children learn at an early age that certain conditions will be placed upon them in exchange for approval or love from the parents. For example, a parent may tell a child that he/she must love the new baby sister or brother, or else Mommy and Daddy won't love them. This kind of hostage mentality could harbor and suppress negative ill will towards the new baby which will eventually express itself later on in life.

To gauge a child's self-concept, Susan Harter developed the Self-Perception Profile for Adolescents. In it, domains such as scholastic competence, behavior conduct, close friendships, social acceptance, athletic competence, romantic appeal, and physical appearance are rated using a number of indicators. Some of the positive indicators include whether the child or adolescent expresses their opinion, maintains eye contact during conversion, works cooperatively in a group, maintains a comfortable space between self and others, and uses proper voice levels for various situation. Negative indicators could include teasing, gossiping, using dramatic gesturing, engaging in inappropriate touching or avoiding physical contact, verbally putting down self or others, or bragging about achievements, skills, or appearance.

Cultural differences

Worldviews about the self in relation to others differs across and within cultures. In Western cultures "the normative imperative /—/ is to become independent from others and to discover and express one's attributes".Relationships, memberships, groups, and their needs and goals, tend to be secondary to the self. When assessing self-concept, one’s positioning among peers is important because of the competitive nature of society, where people view themselves as better or worse than peers. In Asian cultures, an interdependent view of the self is more prevalent. Interpersonal relationships are more central than one’s individual accomplishments. Great emphasis is placed on these relationships, and the self is seen primarily as an integral part of society. When asked to complete 20 "I am" statements, members of non-Western cultures tended to describe themselves in more interdependent terms than members of Western cultures did, whereas members of Western cultures described themselves as more independent.

A study published in the International Journal of Intercultural Relations gives another division of the independent and interdependent selves based on subcultures. A small study done in Israel shows the different characteristics most prevalent of mid-level merchants in an urban community versus those in a communal settlement, called the kibbutz. Similar to the Western v. non-Western perspectives, the collectivist members valued the interdependent self more that the urban members. Likewise, the urban samples held more value to independent traits than the kibbutz. Both answered with more independent traits than interdependent. The study divided the independent and interdependent traits into subcategories to further define what are the most valued by the two subcultures. On the independent scale, personal traits showed the greatest prevalence for the individualists, while hobbies and preferences were greater for the collectivists. Work and school were the most frequently described interdependent responses for the urban sector, while residence was most often referred to by the kibbutz.

Gender differences

Gender has also been shown to be an important factor in the formation of self-concept. Early research inspired by the differences in self-concept across culture suggested that men tend to be more independent while women tend to be more interdependent. However, more recent research has shown that, while men and women do not differ between independence and interdependence generally, they do differ in the distinction between relational and collective interdependence. Men tend to conceive of themselves in terms of collective interdependence while women conceive of themselves in terms of relational interdependence. In other words, women identify more with dyadic (one-on-one) relationships or small cliques, whereas men define themselves more often within the context of larger groups.

The developmental perspective

Research by Tiedemann (2000) found that parents' and teachers' gender stereotypes about children's mathematical abilities influenced children's self-concepts about their mathematical ability prior to having extensive experience with math in school. Tiedemann's (2000) research findings also indicate that the correlation between adult's gendered stereotypes and children's beliefs about themselves increased as children aged throughout elementary school. Additional research by Benner and Mistry (2007) indicates that parent's initial expectations for their children, during early childhood, correlate with children's academic success. These findings highlight the influence of adult stereotypes and expectations on children's self-concept formation.

Research by Maccoby (1990) found that boys and girls choose same-sex play partners by age 3 and maintain their preferences until late elementary school Boys and girls become involved in different social interactions and relationships. Girls tend to prefer one-on-one dyadic interaction, while boys prefer group activities. Girls tend to share secrets and form tight, intimate bonds with one another. Furthermore, girls are more likely to wait their turn to speak, agree with others, and acknowledge the contributions of others. Boys, on the other hand, build larger group relationships based on shared interests and activities. Boys are more likely to threaten, boast, and call names, suggesting the importance of dominance and hierarchy in groups of male friends. Subsequently, the social characteristics of boys and girls tend to carry over later in life as they become men and women.

Researchers debate when self-concept development begins but agree on the importance of person's life. Tiedemann (2000) indicates that parents' gender stereotypes and expectations for their children impact children's understandings of themselves by approximately age 3. Others suggest that self-concept develops later, around age 7 or 8, as children are developmentally prepared to begin interpreting their own feelings, abilities, and interpretations of feedback they receive from parents, teachers, and peers about themselves. Despite differing opinions about the onset of self-concept development, researchers agree on the importance of one's self-concept, which influences people's behaviours and cognitive and emotional outcomes including (but not limited to) academic achievement, levels of happiness, anxiety, social integration, self-esteem, and life-satisfaction.

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Impact Of Mathetics Style Of Programming On Arithmetic Achievement Of 10th Standard Students

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Mathematical anxiety

Math anxiety is a phenomenon that is often considered when examining students' problems in mathematics.It can also be called Math Phobia. Mark H. Ashcraft, Ph.D. defines math anxiety as "a feeling of tension, apprehension, or fear that interferes with math performance" (2002, p. 1).[1] The first math anxiety measurement scale was developed by Richardson and Suinn in 1972. Since this development, several researchers have examined math anxiety in empirical studies.[1] Hembree [2] (1990) conducted a thorough meta-analysis of 151 studies concerning math anxiety. It determined that math anxiety is related to poor math performance on math achievement tests and that math anxiety is related to negative attitudes concerning math. Hembree also suggests that math anxiety is directly connected with math avoidance. Ashcraft[1] (2002) suggests that highly anxious math students will avoid situations in which they have to perform mathematical calculations. Unfortunately, math avoidance results in less competency, exposure and math practice, leaving students more anxious and mathematically unprepared to achieve. In college and university, anxious math students take fewer math courses and tend to feel negative towards math. In fact, Ashcraft found that the correlation between math anxiety and variables such as confidence and motivation are strongly negative. In addition to their avoidance of mathematics, high math anxious people often experience negative thoughts and ruminations when they are engaging in math tasks. These negative thoughts often focus on the consequences of doing poorly on their math problems or tests (Ashcraft & Kirk, 2001). Math anxiety can start in children as young as first grade. Research by Sian Beilock and colleagues demonstrates that not only do young children experience math anxiety, but this anxiety is associated with poor performance in math (e.g., Beilock, Gunderson, Ramirez, & Levine, 2010). According to Ashcraft,[3] because math anxiety can cause math avoidance, an empirical dilemma arises. For instance, when a highly math-anxious student performs disappointingly on a math question, it could be due to math anxiety, or the lack of competency in math because of math avoidance. Ashcraft determined that by administering a test that becomes increasingly more mathematically challenging, he noticed that even highly math-anxious individuals do well on the first portion of the test measuring performance. However, on the latter and more difficult portion of the test, there was a stronger negative relationship between accuracy and math anxiety.

Mathematical anxiety in schools: Causes and potential solutions

Causes: Students often develop mathematical anxiety in schools, often as a result of learning from teachers who are themselves anxious about their mathematical abilities in certain areas. Typical examples of areas where mathematics teachers are often incompetent or semi-competent include fractions, (long) division, algebra, geometry "with proofs", calculus, and topology. In many countries, would-be math teachers are required only to obtain passing grades of 51% in mathematics exams, so that a math student who has failed to understand 49% of the math syllabus throughout his or her education can, and often does, become a math teacher. His or her fears and lack of understanding then pass naturally to his or her students. As John Taylor Gatto has demonstrated at length, modern Western schools were deliberately designed during the late 19th century to create an environment which is ideal for fostering fear and anxiety, and for preventing or delaying learning**.**Math is usually taught as a right and wrong subject and as if getting the right answer were paramount. In contrast to most subjects, mathematics problems almost always have a right answer. Additionally, the subject is often taught as if there were a right way to solve the problem and any other approaches would be wrong, even if students got the right answer. When learning, understanding the concepts should be paramount, but with a right/wrong approach to teaching math, students are encouraged not to try, not to experiment, not to find algorithms that work for them, and not to take risks. "Teachers benefit children most when they encourage them to share their thinking process and justify their answers out

loud or in writing as they perform math operations. […] With less of an emphasis on right or wrong and more of an emphasis on process, teachers can help alleviate students' anxiety about math".
While teaching of many subjects has progressed from rote memorization to the current Constructivist approach, math is still frequently taught with a rote learning behaviorist approach. That is,

- a problem set is introduced
- a solution technique is introduced
- practice problems are repeated until mastery is achieved

Constructivist theory says the learning and knowledge is the student's creation, yet rote learning and a right/wrong approach to teaching math ensures that it is external to the student.
Teachers who actually understand what they are teaching tend to encourage questions from the students. Those teachers who do not understand much about their subject, on the other hand, impose fear on the students to prevent them asking questions which might expose the teacher's ignorance.
It has long been well established that anyone (other than a tiny minority who have serious learning disabilities) can learn any area of mathematics, given a desire to learn, a coherent presentation of the information, and adequate practice. Nevertheless, many educational administrators continue to profess the belief that anything more complex than simple arithmetic is too difficult for most people.
In spite of the unfortunate design of the modern school system, a remarkably high percentage of schoolchildren continue to find mathematics interesting, relaxing, easy, and enjoyable.

Solutions
Studies by Herbert P. Ginsburg, Columbia University, show the influence of parents' and teachers' attitudes on '"the child's expectations in that area of learning.'... It is less the actual teaching and more the attitude and expectations of the teacher or parents that count." This is further supported by a survey of Montgomery County, Maryland students who "pointed to their parents as the primary force behind the interest in mathematics.".
Math Academy Online/Platonic Realm contends that math has two components. The first component, commonly focused on in many schools, is to calculate the answer. This component also has two subcomponents, namely the answer and the process or method used to determine the answer. Focusing more on the process or method enables students to make mistakes, but not 'fail at math'. The second component is to understand the mathematical concepts that underlay the problem being studied. "… and in this respect studying mathematics is much more like studying, say, music or painting than it is like studying history or biology."
Amongst others supporting this viewpoint is the work of Dr. Eugene Geist, Associate Professor at Ohio University – Athens, Ohio and an early childhood education specialist. Dr. Geist's recommendations include focusing on the concepts rather than the right answer and letting students work on their own and discuss their solutions before the answer is given. Emphasis is given that young people hate to be wrong and hate situations where they can be embarrassed by being wrong.
National Council of Teachers of Mathematics (NCTM) (1989, 1995b) suggestions for teachers seeking to prevent math anxiety include:

- Accommodating for different learning styles
- Creating a variety of testing environments
- Designing positive experiences in math classes
- Refraining from tying self-esteem to success with math
- Emphasizing that everyone makes mistakes in mathematics
- Making math relevant
- Letting students have some input into their own evaluations
- Allowing for different social approaches to learning mathematics
- Emphasizing the importance of original, quality thinking rather than rote manipulation of formulas

Math (and Statistics) Therapy is a combination of coaching and counseling, provided for adults by people with credentials in both counseling and math education. In Math Therapy the reasons for anxiety are addressed, as well as the mathematical skills which are lacking. New coping skills are introduced and practiced, so that fear, distaste or other negative emotions do not block math (or statistics) learning.
There are several anxiety reducing techniques that teachers can teach their children and practice periodically throughout the year. Teachers will need to learn these techniques and encourage the students to practice them at home and to use them prior to testing or when feeling anxious during math class.

Several studies have shown that relaxation techniques can be used to help alleviate anxiety related to mathematics. In her workbook Conquering Math Anxiety, 3rd edition, Cynthia Arem offers specific strategies to reduce math avoidance and anxiety. One strategy she advocates for is relaxation exercises and indicates that by practicing relaxation techniques on a regularly basis for 10–20 minutes students can significantly can reduce their anxiety.

Dr. Edmundo Jacobson's Progressive Muscle Relaxation taken from the book Mental Toughness Training for Sports, Loehr (1986) can be used in a modified form to reduce anxiety as posted on the website HypnoGenesis.

Visualization has also been used effectively to help reduce math anxiety. Arem has a chapter that deals with reducing test anxiety and advocates the use visualization. In her chapter titled Conquer Test Anxiety (Chapter 9) she has specific exercises devoted to visualization techniques to help the student feel calm and confident during testing.

Studies have shown students learn best when they are active rather than passive learners.

The theory of multiple intelligences suggests that there is a need for addressing different learning styles. Math lessons can be tailored for visual/spatial, logical/mathematics, musical, auditory, body/kinesthetic, interpersonal and intrapersonal and verbal/linguistic learning styles.

Everyone is capable of learning, but may learn best in different ways. Therefore, lessons must be presented in a variety of ways. New concepts can be taught through play acting, cooperative groups, visual aids, hands on activities or information technology. To help with learning statistics, there are many applets found on the Internet that help students learn about many things from probability distributions to linear regression. These applets are commonly used in introductory statistics classes, as many students benefit from using them.

Active learners ask critical questions, such as: *Why do we do it this way, and not that way*? Some teachers may find these questions annoying or difficult to answer, and indeed may have been trained to respond to such questions with hostility and contempt, designed to instill fear. Better teachers respond eagerly to these questions, and use them to help the students deepen their understand by examining alternative methods so the students can choose for themselves which method they prefer. This process can result in meaningful class discussions. Talking is the way in which students increase their understanding and command of math. Teachers can emphasize the importance of original thinking rather than rote manipulation of formulas. This can be done through class conversations. Teachers can give students insight as to why they learn certain content by asking students questions such as "What purpose is served by solving this problem?" and "why are we being asked to learn this?"

Reflective journals help students develop meta cognitive skills by having them think about their understanding. According to Pug alee, writing helps students organize their thinking which helps them better understand mathematics. Moreover, writing in mathematics classes helps students problem solve and improve mathematical reasoning. When students know how to use mathematical reasoning, they are less anxious about solving problems.

However, there is still a large part of school math teaching which consists of memorization, repetition, and mechanically performed operations. Times tables are one example, wherein rote learning is essential to mathematics performance. When a student fails to learn the times tables at a young age, he or she can experience math anxiety later, when all the students' classmates can remember the tables but he or she cannot.

Children learn best when math is taught in a way that is relevant to their everyday lives. Children enjoy experimenting. To learn mathematics in any depth, students should be engaged in exploring, conjecturing, and thinking, as well as in rote learning of rules and procedures.

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To Study On Anxiety Disorder, Depression and Other Mental Illnesses Patient's

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Introduction:

Clinical depression has been linked to other mental illnesses, such as anxiety disorders like post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), panic disorder, social phobia, and generalized anxiety disorder. Together, these conditions affect millions of Americans. Fortunately, these disorders are treatable, and those affected can lead normal, productive lives.When depression strikes, the depressed person isn't the only one affected. Everyone around them -- family, friends, and co-workers -- feels the impact of their depression. Helping a loved one cope with depression can be key to his or her recovery. But it isn't always going to be easy. Here are some tips. Get the facts. The first thing you should do is learn more about depression. Read up on the causes and treatments for depression. Get other people involved. You can't do this...Anxiety is a normal reaction to stress, but when it takes on a life of its own it becomes an unhealthy, generalized reaction that affects the body and mind. Symptoms can include rapid heartbeat, aches and pains, and muscle tension.According to the National Institute of Mental Health, more than 18% of adults in the United States suffer from an anxiety disorder in any given year, and anxiety disorders are prevalent in 25% of children ages 13-18. Like depression, anxiety is thought to arise from a combination of both genetic and environmental factors.Although anxiety is not always present in depressive disorders, most of the time it lurks beneath the surface. But true depression differs from an anxiety disorder in that a depressed mood is typically its most obvious symptom, whereas anxiety is the primary sign of an authentic anxiety disorder.

Anxiety disorders include:

Generalized anxiety disorder (GAD),Obsessive-compulsive disorder (OCD),Panic disorder -- with or without agoraphobia (fear of being in crowds),Phobic disorder, Social anxiety disorder and Post-traumatic stress disorder (PTSD)

Anxiety disorders affect women twice as frequently as they do men. And many studies show that people with depression often experience symptoms of an anxiety disorder.

An anxiety disorder that's left untreated can cause unnecessary suffering and impairment for both the person who has one and the person's family.People with generalized anxiety disorder (GAD) are filled with greatly exaggerated worry and tension -- even though there is usually nothing to worry about. These individuals anticipate disaster and ruminate about their health, their finances, their work, their relationships and family problems.To make a diagnosis of GAD, excessive worrying and anxiety have to occur more days than not for at least 6 months. The person is unable to control the worry and may have other symptoms including:

Difficulty concentrating, Fatigue, Irritability, Muscle tension, Restlessness and Sleep disturbance

This anxiety disorder is not related to substance abuse or a medical condition. It occurs independently.Obsessive-compulsive disorder, or OCD, is characterized by continuous, unwanted, and intruding thoughts that the person is unable to control. These thoughts are also accompanied by a pervasive anxiety.Compulsive disorder refers to repeated, ritualistic behavior that often is purposeless and which the patient is unable to stop. OCD is also accompanied by general anxiety. Obsessive thoughts and compulsive acts may focus around real-life problems the patient is confronting or may take on a bizarre nature.

Depression and Other Mental Illnesses

Panic Disorder

Panic disorder is another type of generalized anxiety disorder that often co-exists with depression. Panic disorder affects 6 million Americans every year, most often young adults.

Panic disorder involves the sudden onset of overwhelming fear and terror. The person may also experience:

Chest pain, Choking, Difficulty breathing, Dizziness , Gastrointestinal distress, Headache, Shortness of breath, Sweaty palms, Tachycardia (an unusually rapid heart beat) and Trembling

The person feels like he or she is either going to faint, have a heart attack and die, or go crazy.

For somebody to be diagnosed with panic attack, at least four of the following symptoms need to be present:
Chest pain, Choking sensation, Dizziness, Extreme sweating, Fast heartbeat, Fear of dying, Feeling of losing control, Feelings of unreality or being detached from oneself, Hot flashes or chills, Nausea, Numbness, Shakiness and Shortness of breath
These symptoms are often accompanied by worry over the implications of the attack -- like fear of death from a heart attack -- and altered behavior, like avoiding a particular place because of the attack.

Phobic Disorder
Phobic disorder is an unreasonable or irrational fear of something that poses little or no real danger. The fear can be of a situation, object, or event. If people with phobias can't avoid what they fear, then it immediately results in a marked anxiety response. This response can include rapid heartbeat, nausea, or profuse sweating. Phobias are common and strike one out of 10 Americans, with women twice as likely to have a phobia as men.

Social Anxiety Disorder
Social anxiety disorder, also called social phobia, is a psychological condition that causes an overwhelming fear of situations that require interacting with another person or performing in front of others. Unlike being shy around strangers or nervous before a performance, social anxiety is a fear that you might humiliate yourself with your actions or speech in public.
Social phobia is common. It affects more than 15 million people in any given year. It often begins in childhood and rarely develops after age 25.People with social phobia are often aware that their fears are irrational, but they are unable to ease or erase these fears.The symptoms of social phobia are much the same as symptoms for other anxiety disorders. They include:

- Difficulty talking
- Dry mouth
- Intense sweating
- Nausea
- Racing heart
- Trembling or shaking

Like with other anxiety illnesses, symptoms can be tolerable or so severe that they become socially debilitating.

Post-Traumatic Stress Disorder
Post-traumatic stress disorder (PTSD) happens after exposure to a traumatic event. It may be an event the person witnessed, or a situation in which the person was confronted with a threat of death or serious injury to himself or others.A person's response to such an event involves intense fear, helplessness, or horror. After the initial episode, the person may have distressing recollections of the event, including perceptions, dreams, images, thoughts, or a feeling of reliving the experience. The persistent symptoms that occur after the trauma may result in:

- Anger
- Difficulty concentrating
- Difficulty sleeping
- Exaggerated startle response
- Irritability
- Avoidance of triggering events

Depression Co-Exist With Schizophrenia
Schizophrenia is a type of major psychotic illness that is usually marked by an inability to distinguish the real from the imaginary, confused or jumbled thoughts, and hallucinations. Feelings of emptiness and sadness may be a symptom of the disorder, but schizophrenia and depression are different on a neurobiological level. Schizophrenia is usually not seen in depression.

Depression and Eating Disorders
Eating disorders frequently occur with depression and anxiety disorders. According to the National Institute of Mental Health, eating disorders are marked by extremes. They occur when someone severely reduces food intake or overeats to the extreme. Treatment may include antidepressants.

The two most common types of eating disorders are anorexia nervosa and bulimia nervosa. Eating disorders are most common among teenage girls and women. These disorders often get worse the longer they go untreated. The lack of nutrition associated with eating disorders can harm the body's organs and, in severe cases, lead to death.People with anorexia purposefully starve themselves, despite their hunger. They tend to excel in sports, school, and work -- often seeking perfection. Some people with anorexia stop eating in order to gain a feeling of control over their lives. Others may do so to rebel against parents and other loved ones. The diagnosis of anorexia nervosa requires that a person weigh at least 15% less than his or her ideal body weight. It is estimated that up to 3.7% of females will suffer from anorexia at some time during their lives.Anorexia is primarily a food restriction disorder. However, it is not uncommon for people with anorexia to purge, or empty themselves, through vomiting and abuse of laxatives, enemas, and diuretics. People with bulimia nervosa eat large amounts of food all at once and then vomit. The vomiting may occur multiple times during a day. The vomiting is triggered by a fear of weight gain or stomach discomfort. People with bulimia also use laxatives, diuretics, and vigorous exercise to purge themselves.In order for a person to be diagnosed with bulimia, this behavior must occur at least twice a week for three months in a row. Although people with bulimia are often underweight, they may also have a normal body weight. It is estimated that bulimia will affect up to 4.2% of females at some point in their lives.

Substance Abuse and Depression

Substance abuse -- which is linked to depression -- is the use of drugs or alcohol to the point of social, financial, legal, occupational, or physical harm. Millions of Americans abuse drugs or alcohol for a variety of reasons, among them to cope with stress and anxiety. Biological factors, such as a genetic tendency, may also play a role. Substance abuse may include some of the following symptoms:

- Continuing to use the substance despite the knowledge of its harmful effects on one's physical and mental condition.
- Finding it impossible to discontinue use despite making efforts.
- Giving up or reducing social, recreational, and work-related activities because of substance use.
- Increasing the amount of a substance used over time.
- Spending lots of time and effort either getting the substance or recovering from its use.
- Needing to increase the amounts of a substance in order to become intoxicated, or experiencing a diminished effect from continued use of the same amount.
- Taking more of the substance to ease withdrawal symptoms.
- Withdrawal symptoms such as nausea, shaking, insomnia, agitation, hallucination, and sweating following a reduction in the amount of a substance taken.

There are varied approaches to treating people with substance abuse. Some will need detoxification in a hospital or a clinic. Rehabilitation may include one-on-one counseling, group counseling, and support groups. Antidepressant medicines -- in combination with education to help people address and conquer the emotions that cause them to abuse drugs or alcohol -- can also be effective.

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A Comparative Study On Effect Of Plyometric Training On Strength And Endurance Of Abdominal Muscles, Leg Strength, Thigh Girth And Calf Girth

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Abstract
The purpose of the investigation was to find out the effect of plyometric training on strength and endurance of abdominal muscles, leg strength, thigh girth and calf girth. The study Conducted on 25 students, who were selected randomly from three years degree course B.P.E.from Mahadev Desai Sharirik Shikshan Mahavidyalaya Sadra, Gandhinagar. Run by Gujarat Vidyapith, Ahmedabad, one experimental group designed within this 25 students. The pre and post tests were conducted before and after completion of six week training programme. Which was Bent knee sit ups for strength and endurance of abdominal muscles, Vertical jump test for leg strength and circumference of thigh and calf by steal tape. T-test was used to test the effect of plyometric training on variables used in the present study. The result of the study reveals that there was significant difference in 0.05 levels of strength and endurance of abdominal muscles, Leg Strength and calf girth among the subjects.

Key words: plyometric training, strength and endurance of abdominal muscles, leg strength, thigh and calf girth.

Introduction:

Sport as an activity offers an opportunity for self knowledge, self-expression, and fulfillment; personal achievement, skill acquisition and demonstration of ability; social interaction, enjoyment, good health and well-being, It promotes involvement, integration and responsibility in society and contributes to the development of society, especially when sports activities have been accepted as an integral part of the culture of every society in every nation (Sharma, 2004).Plyometrics are exercises that evolved from old Soviet training methods created by Yuri Verkhoshansky around the 60's and 70's. It was originally called shock training, and this training method started getting popular because East European athletes began dominating the sports world in the 1970's. They were outclassing athletes from other countries in the Olympics, winning medal after medal. Their success was largely attributed to their unique training method. The term "Plyometrics" is believed to have been coined in 1975 by an American track and field coach called Fred Wilt. Plyometric training may improve physical performance in the following ways. Elastic strengthening loads the elastic components of the Muscular system and thereby increases in the tension of the resulted. (Bosco and Komi, 1979).Thus here researchers tried to analyze effect of plyometric training programme on some components fitness and anthropometry.

Methodology:

Twenty five students studying under graduate course in Mahadev Desai Sharirik Shikshan Mahavidylay, Gujarat Vidyapeeth, Sadra,Gujarat were randomly selected as subjects and their age ranged from 17-25 Years. The medical examination was done in order assured that they all medically and physically fit. Their age has been verified from the college record. The selected subjects were assigned into one group. Group - 1 underwent plyometric training (n=25). The training period was limited to one hour per day for five days per week for six weeks. The warm up session was consisted 800 M Run- Nack Rotation- Shoulder Rotation- Hand Rotation- Hip Rotation- Ankle Rotation- Hand Stretching- Side Stretching- Hamstring Stretching- Calf Stretching- Ankle Stretching. Whereas plyometric training programme designed with Two foot Ankle hops, Medicine ball over head throw, Lateral cons hops Single leg bounding, Side throw and Depth jump.Strength and endurance of abdominal muscles, Leg strength, and Thigh and calf girth were selected as dependent variables. The data on Strength and endurance of abdominal muscles were collected by Bent knee sit ups, Leg strength were collected by vertical Jump Test, Thigh and calf girth were collected by steal tape. All the subjects were tested on selected dependent variables prior to and immediately after the training programes.

Analysis of Data and Results

The study was designed to find out the effect of plyometric training on strength and endurance of abdominal muscles, leg strength, thigh girth and calf girth. The objective framed in the present study to test the data collected on variables: strength and endurance of abdominal muscles, leg strength, thigh girth and calf girth. Pre and post tests were conducted prior and after completed six week training programme on experimental group. Statistical analysis was done by using the t-test. Significance level was set at 0.05% level of confidence.

Table 1

The difference of significance for mean in Pre-Test and Post-Test of Experimental group in the Bent knee sit ups

Test Item	Pre Test Mean	Post Test Mean	Mean Difference	Standard Deviation	"t" Ratio
Bent Knee Sit ups	32.24	34.04	1.8	0.53	3.70*

*Significant at .05 Level "t" 0.05 (24) = 2.064

It is seen from table - 1 that Mean difference in Bent Knee Sit ups is 1.8, whereas't' value is 3.70. It is more than significant level. So there was significant difference in pre and post test at .05 level (Shown in Graph-I)

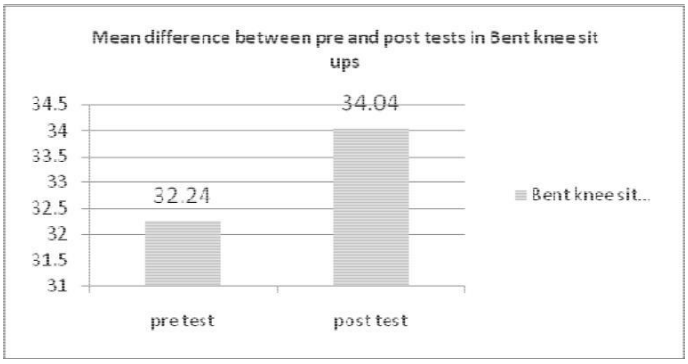


Table 2

The difference of significance for mean in Pre-Test and Post-Test of Experimental group in the Vertical Jump

Test Item	Pre Test Mean	Post Test Mean	Mean Difference	Standard Deviation	"t" Ratio
Vertical Jump	17.54	18.86	1.32	0.25	5.36*

*Significant at .05 Level "t" 0.05 (24) = 2.064It is seen from table - 2 that Mean difference in Vertical jump is 1.32, whereas "t" value is 5.36. It is more than significant level. So there was significant difference in pre and post test at .05 level.(shown in graph-II)

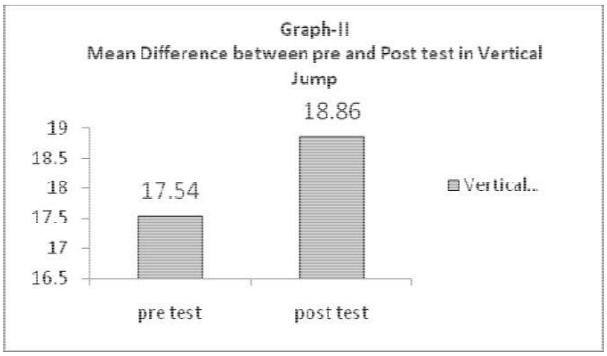


Table 3

The difference of significance for mean in Pre-Test and Post-Test of Experimental group in the Thigh Girth

Test Item	Pre Test Mean	Post Test Mean	Mean Difference	Standard Deviation	"t" Ratio
Thigh Girth	53.55	53.48	0.07	0.07	0.57

*Significant at .05 Level "t" 0.05 (24) = 2.064

It is seen from table - 3 that Mean difference in Thigh Girth is 0.07, whereas "t" value is o.57. It is not more than significant level. So there was no significant difference in pre and post test at .05 level.(shown in graph-III).

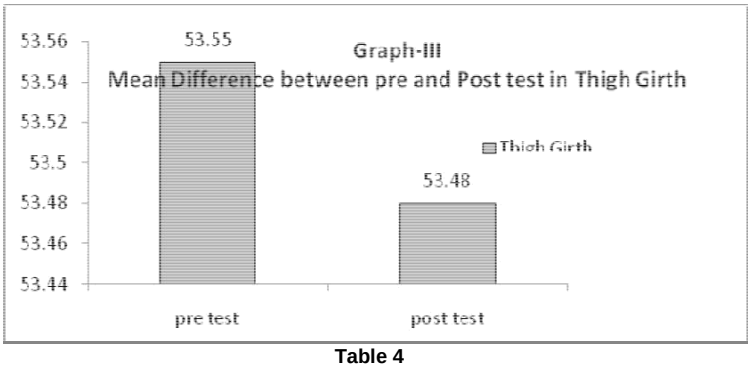


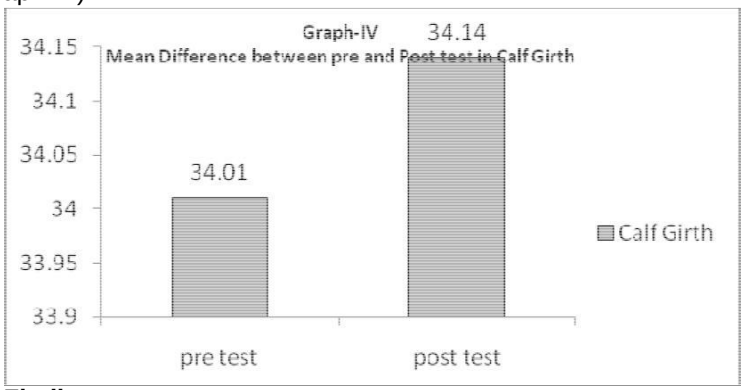
Table 4

The difference of significance for mean in Pre-Test and Post-Test of Experimental group in the Calf Girth

Test Item	Pre Test Mean	Post Test Mean	Mean Difference	Standard Deviation	"t" Ratio
Calf Girth	34.01	34.14	0.13	0.05	2.80*

*Significant at .05 Level "t" 0.05 (24) = 2.064

It is seen from table - 3 that Mean difference in Thigh Girth is 0.13, whereas "t" value is 2.80. It is more than significant level. So there was significant difference in pre and post test at .05 level.(shown in graph-IV)



Discussion And Findings:

It is revealed that from analysis of data there were significant differences in Bent knee sit ups, Vertical Jump and calf girth. There was no significant difference in Thigh girth. Because of such training, the energy production abilities of Muscles are improved Mostly this change is seen in lower portion of the body. It becomes helpful to maintain workload for a longer period. The idea behind plyometrice is simple: exploit the muscles' cycle of lengthening and shortening to increase power. Plyometric exercise start with rapid stretching of the muscle (eccentric contraction) following by a shortening the same muscle (concentric contraction) The goal of plyometrics is to train the nervous system to react quickly to the lengthening of the muscle by rapidly shortening the same muscle with maximum force. This process is called the stretch-shortening cycle. The result of this study shown that there were improvement because of six week plyometric training programme in strength and endurance of abdominal muscles, leg strength and calf girth.

Conclusions:

From the results of comparative effect among the plyometric training on criterion variables, it was concluded that the significant difference shown in strength and endurance of abdominal muscles, Leg strength and Calf girth.

Strength and endurance of abdominal muscle showed more significant difference compare to leg strength and calf girth. Whereas Calf girth showed least significant difference compare to two other variables. There was no significant difference in Thigh girth.

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Enhancing Academic Achievement of College students through Yogi Practices

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This study is helpful to determine the effect of selected Yogic training programme on academic achievement college students with age group 18-21 year. The selected students were randomly assigned into two equal viz, the experimental group (Group A; n1 =20) and the control group (Group b; n2=20) for the experiment. After the First sem of the college yoga practice was given in morning one hour to the experimental group for twelve weeks. During this treatment control group did not participate in yoga. After twelve week of Yoga treatment the spectacular effect was found. The mean scores of control experimental group were 72.3600 (Sd 20.939) and 70.9200 (SD 17.5200) respectively. Whereas, the mean difference was1.44 and the't' values of pre test was 0.236 which were not significant (accept null hypothesis). But in case of post test of Academic achievement, the mean scores of control and experimental group were 75.8000 (SD 19.457) and 90.4400 (SD 18.9189) respectively significant (reject null hypothesis). It reflects that the mean score of post test of Academic achievement of control group and experimental group was differ significantly. Therefore this experimental group was differ significantly. Therefore this experimental study suggests that, daily Yoga practice helped to improve academic achievement of college students.

Introduction:

Yoga is a very ancient practice that originated in India. Yoga is viewed as a physical, mental and spiritual discipline that confers a sound body and a sound mind. Many studies are conducted by various researches on yoga and its effects on physical function and mental function but less attention has been paid to academic achievement, mental health and well-being by yoga practitioners. It was, therefore, assumed that similar impact of Yoga may also be experienced by the S M college students of Dharwad, with theEvident information available, we sought to specially design a standard yoga exercise module, to determine the effect of selected yogic training programme on academic achievement in student with age group 18 to 21 years.The present study was undertaken with the objective, to collect the information regarding the effect of certain yogic practices on Academic Achievement

Methodology

Forty college students (N=40) from S M College, Dharwad were randomly selected. The selected students were randomly assigned into two equal groups viz., the experimental group (Group A: n-20) and the control group (B:n2=20) for the experiment. After the first semester, the Yoga practice was given in morning one hour to the experimental group for twelve weeks. During this treatment control group did not participate yoga training. Both groups were not controlled for their activity. The Marks of first semester were considered as per and post test data for the investigation of academic achievement of the students. After review of many research literatures, it was found the very few researches were conducted on academic achievement and Psychological parameters but the area of academic achievement through Yoga is ignored. So some Asana are selected for the promotion of academic achievement and presented in below

Asanas

1. Sukhasana
2. Padmasana
3. Parvatasana
4. Matsyasana
5. Vajrasana
6. Yogamudra
7. Pascimotanasana
8. ArdhaMatsyendrasana
9. Bhujangasana
10. Salabhasana
10. Pavanmuktasana
12. Halasana
13. Sarvangasana
14. Tadasana
15. parivartitaCakrasana
16. Nadi Suddhi Pranayama
17. Bhramari Pranayam
18. Ujjai
19. Om Chanting
20. Savasana

Statistical Procedure: As per the research design the collected data were analyzed by employing standard statistical technique't' test. Further the result have been interpreted and discussed logically to conclude. This investigation by Table and graph.

Group viz., N, Mean, Standard Deviation, Mean deference and't' value of academic achievement

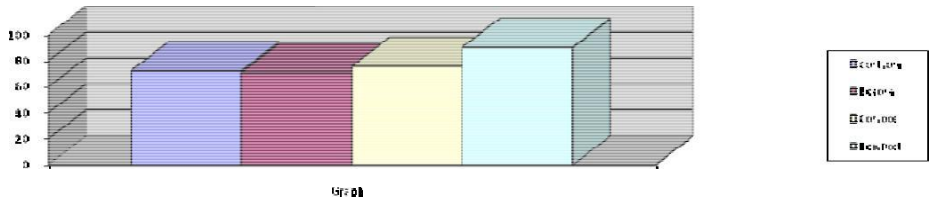
	Group	N	Mean	Standard Deviation	Mean deference	't'	(Sig) 2 tailed	Remarks
Academic achievement pre	1	20	72.3600	20.939	1.44	0.236	2.086	accept null hypothesis
	2	20	70.9200	17.520				
Academic achievement post	1	20	75.8000	19.457	14.64	2.41	2.086	reject null hypothesis
	2	20	90.4400	18.918				

1 – Control group, 2- Experimental group

Result of Academic achievement

It is seem from table- in case of pre test of Academic achievement the mean scores of control and experimental group were 72.3600 (SD 20.939) and 70.9200 (SD 17.520) respectively whereas, the mean difference was 1.44 and the 't' values of per test was 0.236 which sere not significant (accept null hypothesis) it reflects that the mean score of pre test of Academic achievement of control group and experimental group do not differ significantly. This result indicates that the pre-test means of yoga training group and control group in Academic achievement test were more or less similar. But in case of post test of Academic Achievement, the mean scores of control and experimental group were 75.8000 (SD 19.457) and 90.4400 (SD 18.918) respectively, whereas, the mean difference is 14.64 and't' values of post test was 2.41 which is significant (reject null hypothesis) it reflects that the mean score of post test of academic achievement of control group and experimental group differed significantly. This result helps to interpret the Yoga practice were effective in improving Academic achievement of the college students, Dharwad. In this context the null hypothesis no. 1 that 'there is no significant difference in mean score of Academic Achievement of control and experimental group is rejected. This same result is also presented in following graph.

Pre and post control experiment graph



Discussion

In case of pre test of Academic achievement, the mean difference was 1.44 and the 't' value of per test was 0.236 which were not significant (accept null hypothesis). It reflects that the mean score of pre test of academic Achievement of control group and experimental group did not differ significantly. But in case of post test of Academic achievement the mean difference is 14.64 and the 't' value is 2.41 which is significant (reject null hypothesis). If reflects that the mean score of post test of Academic achievement of control group and experimental group differed significantly. The result reveals that, the subject of experimental group (Yogic practices group) could show higher score in academic achievement, as measured by test, than the control group. Thus, the mean gain in academic achievement has increased significantly in experimental group as compared to control group. So Yogic practice warrant a statistically significant effect, to increase the overall level of academic achievement of college student, which rejects the null hypothesis. "There was no significant difference in mean gain score academic achievement, as measured by assessment, between control and experimental groups due to specific", has been rejected

Conclusion:

This experimental study suggests that, daily yoga practice helps to improve academic achievements of college students.

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A Comparative Analysis Of Stress Control And Intellectualwellness Assessment Of Active And Inactive Boys

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Abstract
The purpose of the study was to compare the Stress control and Intellectual wellness Assessment of Active and Inactive boys (age16-18 years). fifty (50) Active and fifty (50) Inactive boys were randomly selected for the study. To measure Stress control and Intellectual wellness Assessment of Active and Inactive boys Life-style assessment Inventory adopted by Anspangh Davids, Michael, H. Hamrich and Frank D. Rosato was used. For statistical analysis and Interpretation of data't' test was conducted. It was observed that there was significant difference in Stress control and Intellectual wellness Assessment of Active and Inactive boys. Active boys were better in case of Stress control and Intellectual wellness Assessment as compare to Inactive boys.

Introduction
Stress control and Intellectual wellness Assessment are the important dimensions of Life-style Assessment. In reality, man has explored the outer space but he has not dived sufficiently into the spaces within. Application of science and technology has resulted in cognitive development. Our knowledge and understanding of objects and the world have increased tremendously. In the process, however, man ignored his emotional patterning in life. As a result, in spite of plenty of wealth, physical comfort, and knowledge of sources of energy, space and communication skills, man is dissatisfied, disturbed and unhappy. Selfishness, greed, wrath and lust are playing havoc. They have given rise to distrust, insecurity, anxiety, stress and conflict, and have made individuals and society restless and emotionally and socially weaker. Coleman (1970) rightly remarked, "The seventeenth century has been called the Age of Enlightenment; the eighteenth, the Age of Reason; the nineteenth, the Age of Progress; and the twentieth, the Age of Anxiety" Development of science and technology discouraging the human beings from doing vigorous activities as a result of which various physical and mental diseases are flourishing at a great speed throughout the world. Hence, in twenty-first century health and wellbeing should be our prime concern. 'Healthy' living is now a very popular term in the world. But it is not so easy to be a healthy person. It is shame that some people are trying to purchase health by their dollars. But health cannot be purchased; it can only be acquired through changing life-style. In today's hectic world, most of us are spending more time at work, and have increasingly less time to look after our health. The most serious health risks are behaviors that relate to lack of exercise, poor diet, and substance abuse including alcohol and tobacco. The findings of the present study will give information regarding Stress control and Intellectual wellness Assessment of Active and Inactive boys.

Methodology
Ffifty (50) Active and fifty (50) Inactive boys (age16-18 years) were randomly selected from Bathan beria Srinibash Vidyamandir Higher Secondary School in Purba Medinipur, Active boys (age16-18 years) were those boys who regularly used to go for physical activities willingly and participated in matches and tournaments. On the Other hand inactive Boys were those boys who never used to take part in physical activities willingly and participate in matches and tournaments. The subjects were free of smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during test. To measure Stress control and Intellectual wellness Assessment of Active and Inactive boys Life-style assessment Inventory adopted by Anspangh Davids, Michael, H. Hamrich and Frank D. Rosato was used. For statistical analysis and Interpretation of data't' test was conducted.

Results And Discussion
For statistical analysis and Interpretation of data't' test was conducted. The results are presented in tabular form as given here under.

Table – 1: Mean SD of Stress control Assessment and Comparison of t-test Between Means of Active and Inactive boys.

Group	Mean	MD	t-value
Active Boys	92.46	24.40	65.80*
Inactive Boys	68.06		

*Significant at 0.05 level

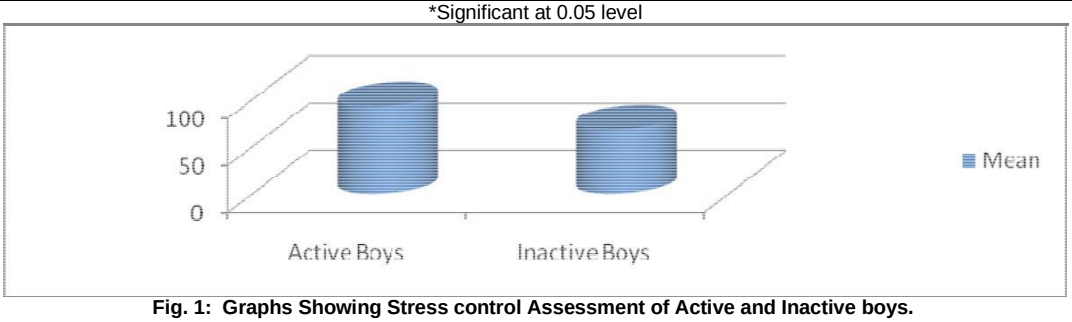

Fig. 1: Graphs Showing Stress control Assessment of Active and Inactive boys.

Table -1 show that there were significant differences in Stress control Assessment of Active and Inactive boys. The Mean of Stress control Assessment of Active and Inactive boys were 92.46 and 68.46 respectively. 't' test was applied and t-value (65.80) appeared significant at 0.05 level of confidence. Table–1 was illustrated through graphical representation (Fig. 1) for clear understanding of this study.

Table – 2: Mean SD of Intellectual wellness Assessment and Comparison of t-test Between Means of Active and Inactive boys.

Group	Mean	MD	t-value
Active Boys	70.20	16.44	48.38*
Inactive Boys	53.76		

*Significant at 0.05 level

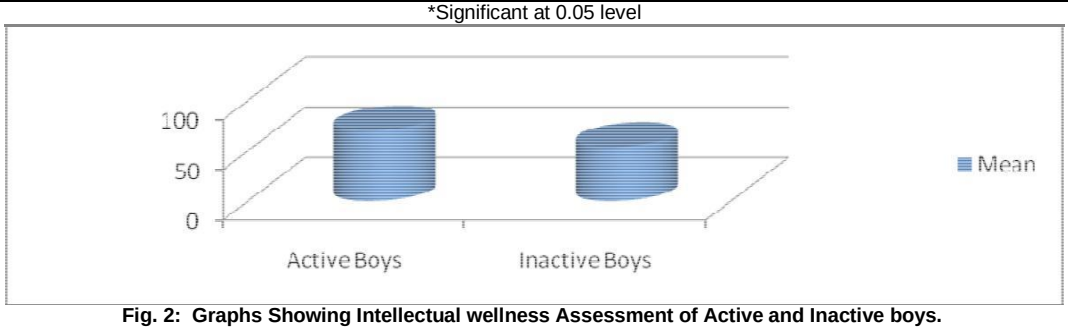

Fig. 2: Graphs Showing Intellectual wellness Assessment of Active and Inactive boys.

Table-2 gives information regarding Intellectual wellness Assessment of Active and Inactive boys. Table shows that there were significant differences in Intellectual wellness Assessment of Active and Inactive boys. The Mean of Intellectual wellness Assessment of Active and Inactive boys were 70.20 and 53.76 respectively. 't' test was applied and t-value (48.38) appeared significant at 0.05 level of confidence. Graphical representation (Fig. 2) also indicates similar trend of this study.

Conclusion: Based on the result of the present study and within the limitation, the following conclusions may be drawn.

Active boys were better in case of Stress control Assessment as compare to Inactive boys.

Active boys were better in case of Intellectual wellness Assessment as compare to Inactive boys.

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Effect Of Varied Yogic Practices On Body Mass Index Component Of Obese Engineering College Men Students

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Abstract
The purpose of the study was to find out the effect of varied yogic practices on selected body mass index components of obese college men. To achieve the purpose of this study, thirty obese college men were selected as subjects from SVS College of Engineering, Coimbatore Tamilnadu and their age ranged from 18 to 22 years. The true randomized group design was used in which thirty obese college men were divided into two groups of fifteen each named as varied yogic practices and control group. The subjects were tested prior to and after the six weeks of experimentation. The obtained data from the experimental and control groups initial and final readings were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence which was fixed at 0.05 level of confidence and result reveals that the experimental group had achieved significant improvement on body composition when compared to control group. It was also observed that the six weeks of varied yogic practices program have significantly improved the body composition of obese college men.
Key Words: Obese college men, Body composition, yoga.

Introduction
Yoga is a method of education in the society. It is an art of successful living. It is a way of healthy living at all levels. It is a tool for positive change. It is the sovereign remedy for all worldly miseries. It is the science of creativity and personality development. It is a voyage of discovering truth or knowing the reality. It is a utilitarian commodity. Yoga is a total experience of human life. Thus, yoga is as old as civilization. Yoga is as old as mankind. Yoga is creation. Yoga is intimate and ultimate.Over two thirds of adults are overweight and nearly one quarter obese. Obesity is a chronic state of being overweight. It's a life threatening condition and current research has shown that obesity is the leading cause for the increased health threats those persons of the developed world. Health is our birthright and to remain healthy, it is not necessary to depend upon any health centre physician or medication. It is entirely in our hands to keep healthy. However, in the present day conditions keeping good health is becoming more and more difficult and diseases are proliferating.

Methodology
The purpose of the study was to find out the effect of varied yogic practices on body mass index component of obese Engineering College men. To achieve the purpose of this study, thirty obese college men were selected as subjects from *SVS College of Engineering, Coimbatore Tamilnadu*, and their age ranged from 18 to 22 years. The true randomized group design was used in which thirty obese college men were divided into two groups of fifteen each named as varied yogic practices and control group. The subjects were tested prior to and after the six weeks of experimentation. Body composition was measured by BMI. BMI is also referred to as 'body mass indicator'. BMI is an internationally used measure of obesity. The obtained data from the experimental and control groups initial and final readings were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence which was fixed at 0.05 level of confidence.

Imperial BMI Formula
The imperial BMI formula accepts weight measurements in pounds & height measurements in either inches or feet.

*1 foot = 12 inches ,inches² = inches * inches*

Table: Imperial BMI Formula

$$\text{BMI}_{(\text{lbs/inches}^2)} = \frac{\text{(weight in pounds * 703)}}{\text{height in inches}^2}$$

Metric BMI Formula

The metric BMI formula accepts weight measurements in kilograms & height measurements in either cm's or meters.

1 meter = 100cms meters²
*= meters * meters*

Calculate BMI & Find Weight Status

Table: Metric BMI Formula

$$\text{BMI} = \frac{\text{weight in kilograms}}{\text{height in meters}^2} \quad (\text{kg/m}^2)$$

Table: BMI Weight Status Categories

BMI	Weight Status
Below 18.5	Underweight
18.5 -24.9	Normal
25 - 29.9	Overweight
30 & Above	Obese

Results and Discussion

The results are presented in the following tables,

Table – I- Body Composition

	Experimental Group	Control Group	Source of variance	Sum of squares	df	Mean square	F
Pre test mean	30.32	30.71	BG	1.16	1	1.16	.36
			WG	89.88	28	3.21	
Post test mean	29.10	30.56	BG	15.98	1	15.98	7.33*
			WG	61.12	28	2.18	
Adjusted post mean	29.20	30.46	BG	11.78	1	11.78	8.35*
			WG	38.30	27	1.41	

* Significant at 0.05 level

Table value for df 1 and 28 was 4.20 & for df 1 and 27 was 4.21

The above table indicates the adjusted mean values of experimental and control groups for body composition (29.20 and 30.46). The obtained F-ratio of body composition (8.35) for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence.

Conclusions

From the results obtained, the following conclusions were drawn:

1. The experimental group had achieved significant improvement on body composition when compared to control group.
2. It was observed that the six weeks of yoga training program have significantly improved the body composition of obese Engineering college men.

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Influence Of Play And Movement Activities In Developing Self Awareness And Self Confidence Of School Children

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Abstract
Young children are physically active in different ways than older children, adolescents, or adults. Most physical activity in young children is equivalent to gross motor play. The aim of this study was to find out the influence of play and movement activities in developing self awareness and self confidence of elementary school children. The investigator formulated suitable play and movement activities consisting of minor games and movement activities. The 12 weeks play and movement activities approach significantly improved self awareness and self confidence of the children as assessed through Personality Index developed by Kaliappan. It was concluded that the experimented protocols tried in this research can be implemented among the elementary school children which would be helpful for the all round development of the children right from their early ages.
Ravikumar

Introduction
Physical exercises have been considered as an essential part of human life. The survival of man is physical and movement or the activity is the foremost important thing one learns soon after birth. The literate meaning of ‘physical’ is ‘body’ which strictly relates to physique, health, strength, endurance, speed, agility, flexibility, and physical performance on the sports ground (Uppal, 2000). A well planned and regular lifetime programme of exercise will help us feel better, look better and enable us to enjoy a much comfortable life than we may have been leading until now. Exercise means treating our body with new respect, working with it instead of against it. And all this should be fun. It is therefore important to select a method that suits an individual and their personality (Ann Carpenter, 1984) .

Young children are physically active in different ways than older children, adolescents, or adults. Because most physical activity in young children is equivalent to gross motor play, we suggest that the term "play," not the terms "physical activity," "exercise," or "sports," be used to promote movement in young children. As preschoolers play, they have brief bouts of varied activities with frequent rest periods. Compared with exercising adults, children at play have more spontaneity and less interest in sustaining a single activity. These differences may result from differing needs of the developing brain to provide itself, through activity, with a pattern of varied stimulation from the environment that subserves its own optimal development.

Although it is simple to compile a list of play activities, it is much more difficult to define play. Scales, et al., (1991) called play "that absorbing activity in which healthy young children participate with enthusiasm and abandon". Csikszentmihalyi (1981) described play as "a subset of life..., an arrangement in which one can practice behavior without dreading its consequences". Garvey (1977) gave a useful description of play for teachers when she defined play as an activity which is: 1) positively valued by the player; 2) self-motivated; 3) freely chosen; 4) engaging; and 5) which "has certain systematic relations to what is not play". These characteristics are important for teachers to remember because imposing adult values, requirements, or motivations on children's activities may change the very nature of play.Elementary school education is pursued by children of early adolescence and is in the age group of 11 to 13. Early adolescence is a stage at which the peer group becomes increasingly important, with conformity to peers peaking at 11–13 years. 90% of adolescents identify themselves with a peer group. According to Judith Rich Harris's theory of group socialization, children and adolescents are shaped more by their peers than their parents (Harris 1998) . Peers can encourage both pro-social behavior, which peaks at 11–12 years, or anti-social behavior, which peaks at 14–15 years. Adolescents are less likely to feel depressed or anxious if the peer group provides emotional support. Arguments between parents and children increase considerably during adolescence. However, adolescents with few or no close friends are closer to their parents and are less likely to be subject to peer pressure.(Cynthia 1997)

A major challenge in resurrecting free play is how best to reach parents with messages about the important role of play in their children’s lives. Although those who are providing primary health care to

children have a crowded agenda and little time for behavioral counseling, communicating with parents about play should, nevertheless, receive high consideration because the benefits of play can be presented in a way that is congruent with parents' aspirations for their children's well-being.Play provides opportunities for children to learn social interaction, and all parents aspire for their children to be successful in these interactions. This is because all play with others requires solving some form of a social problem, such as deciding what to play, who can play, when to start, when to stop, and the rules of engagement. Solving these dilemmas and conflicts that arise in play encourages children to compromise and to cooperate. This process can cultivate a range of social and emotional capabilities such as empathy, flexibility, self-awareness, and self-regulation. Such capabilities, sometimes referred together as "emotional intelligence," are essential for successful social interactions in adult life. Emotional intelligence contributes to success in the workplace, and it is the foundation for success in the intimate social relationships, such as between parents, that become the primary models for children's social development.Play for young children assumes many different forms. Mildred Parten (1932) was one of the early researchers studying children at play. She focused on the social interactions between children during play activities. According to Christie and Wardle (1992), short play periods may require children to abandon their group dramatizations or constructive play just when they begin to get involved. Pangrazi, 2001; Siedentop, 1998; Wall & Murray, 1990 , leading physical education scholars did extensive researches in physical education for elementary school children, introduction of physical education, fitness and sports and children and movement respectively. They were unanimous in holding that the "Competitive Achievement Model" should be kept out of the physical education curriculum, especially at the elementary level.

The theoretical foundations based on previous researches proved that there was further scope for research to find out the influence of play and movement activities in development of psychological levels of the children studying in elementary schools and particularly, self awareness and self confidence among them.

Methodology

To achieve the purpose of the study, the investigator randomly selected 40 elementary school children, 20 girls and 20 boys who were studying in Hydrabad, Andhra Pradesh. The randomly selected subjects were asked to undergo twelve weeks programmed play and movement activities as experimental treatment. The play and movement activities consists of ten minor games and nine movement activities. The play and movement activities were provided to the subjects on alternate days and allowed to participate voluntarily under the supervision of the investigator. The subjects' self awareness and self confidence levels were determined using Personality Development Index (Kaliappan, 1996). The personality index is aimed at measuring ten distinct personality characteristics of early adolescents. Among the 85 statements developed to measure ten characteristics, 6 statements (Statement Nos. 7,17,27,37,47 and 57) were devoted to measure Self awareness and 6 statements (Statement Nos. 8, 18,28,38,48 and 58) were devoted to measure self confidence of the subjects. Pre and Post test randomized group design was used in this study. The selected subjects were measured of their pre test scores in self awareness and self confidence and after the treatment of play and movement.

Results

The obtained data on self awareness and self confidence among elementary school children due to 12 weeks play and movement approach was statistically analysed and results presented in Table I.

Table I: Effect of Play and Movement Approach on Self Awareness of Elementary School Children (Boys and Girls)

Boys – Self Awareness					
Test	Mean	Md	Sd	'T' Value	
				Obtained	Significance
Pre Test Post Test	19.35 22.95	3.6	3.87	4.15*	0.05
Girls – Self Awareness					
Pre Test Post Test	16.6 19.8	3.2	1.90	7.49*	0.05

The Pre And Post Test Data On The Influence Of Play And Movement Approach On Self Confidence was analysed using 't' test and the results are presented in Table II.

Table II: Effect of Play and Movement Approach on Self Confidence of Elementary School Children (Boys and Girls)

Boys – Self Confidence					
Test	Mean	Md	Sd	'T' Value	
				Obtained	Significance
Pre Test Post Test	18.05 25.35	7.3	6.38	5.11*	0.05
Girls – Self Confidence					
Pre Test Post Test	19.3 22.95	3.65	2.64	6.18*	0.05

Discussions

The results presented in Table I proved that the play and movement approach among the elementary school children significantly improved self awareness of the boys (MD: 3.6) and among girls (MD: 3.2) as the obtained 't' values 4.15 and 7.49 respectively were significant at 0.05 level. The results presented in Table II proved that the play and movement approach among the elementary school children significantly improved self confidence of the boys (MD: 7.3) and among girls (MD: 3.65(as the obtained 't' values 5.11 and 6.18 respectively were significant at 0.05 level. The observation of the investigator proved that at the elementary school students were no provided with any physical education programme and the supervised play and movement approach made in this research helped them to involve in these activities very enthusiastically and it was proved that the elementary school children improved their self awareness and self confidence as the obtained 't' values were greater than the required table values to be significant at 0.05 level and the improvement was found to be significant.

Conclsions

The experimental protocol suggested in this study was well received by the elementary school children experimented and the children participated enthusiastically and the play and movement approach developed their overall personality as assessed through self awareness and self confidence of the children. It was suggested that the experimented protocols can be implemented among the elementary school children which would be helpful for the all round development of the children right from their early ages.

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Effect Of 12 Weeks Saq Training Programme On Selected Skill Performance Variables Of Junior Volleyball Players

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Abstract
Speed, agility, and quickness (S.A.Q.) training has become a popular way to train athletes. For the present study, ninety six players were selected as samples from the qualified teams for the pre-quarter final in the CBSE sahodaya tournament conducted by the Little kingdom school, Tirupur in the academic year 2012 – 2013. Finally thirty junior volleyball players were randomly selected as subjects for the present study. They were divided into two equal groups. Each group consists of 15 subjects. The age of subjects were ranged from 12-14 years. The researcher had been selected the following variables for the present study: skill performance variables namelyserving and passing ability.The data was collected before and after twelve weeks of training. The collected data was analyzed by using t-test and applyingAnalysis of Co-Variance (ANCOVA) Technique. The level of significance was fixed at 0.05.The findings of the present study have strongly indicates that 12 weeks of S.A.Q. training have significant effect on selected skill performance variables i.e., serving and passing abilityof junior volleyball players.
Key words: Speed, Agility, Quickness, Serving and Passing ability

Introduction
Volleyball is a sport played by two teams consisting of 12 players each on a playing court, divided by a net. The object of the game is to send the ball over the net in order to ground it on the opponent's court and to prevent the same effort by the opponent. The team has three hits or contacts to return the ball. Volleyball requires a high level development of physical, psychological, physiological, and motor skill traits so as to give the best possible performance. A player should have appropriate physical structure and body size suitable for this game. This game demands quick and alert well-coordinated players with great stamina to master its complex skills and playing situation. The skill must be developed up to maximum level to get optimum performance with minimum energy expenditure (Jaster, 1977). Yap &Brown, (2000) defined speed as "the rapidity of movement". Agility is the rapid whole body movement with change of velocity or direction in response to a stimulus (Sheppard & Young, 2006). Lee et.al. (1980) defined quickness as "the ability to read and react to a situation; it is a multidirectional skill that combines explosiveness, reactiveness, and acceleration" (Yap &Brown, 2000). SAQ aims to coach the necessary techniques to provide the basic skill to complete the movements.

Methodology
For the purpose of the present study, ninety six players were selected as samples from the qualified teams for the pre-quarter final in the CBSE sahodaya tournament conducted by the Little kingdom school, Tirupur in the academic year 2012 – 2013. Finally thirty junior volleyball players were randomly selected as subjects for the present study. They were divided into two equal groups. Each group consists of 15 subjects. Group - I was underwent to SAQ training (SAQT), Group – II acted as control group. They didn't undergo for any specific training programme. The age of subjects were ranged from 12-14 years. The researcher had been selected the following variables for the present study: skill performance variable namely serving and passing ability. The selected variables were assessed by using standardized test. The data was collected before and after twelve weeks of training. The collected data was analyzed by using t-test and applying Analysis of Co-Variance (ANCOVA) Technique. The level of significance was fixed at 0.05.

Experimental Design
For the present study pre test – post test randomized group design was used.

Experimental Design
For the present study pre test – post test randomized group design was used.

Training Procedure

The data will be taken for both the groups before and after the experimental period of twelve weeks.After the initial measurements the specially designed training programme was given to the subjects of the experimental group named as SAQ (speed, agility and quickness) training. The training for experimental groups was administrated at Little kingdom School ground, Tirupur. The training sessions were conducted three days a week i.e. (Monday, Wednesday, and Friday) over a period of twelve weeks. Each experimental session was of 30-45 minutes duration with excluding warm-up and warm-down. The training commenced with one week of general physical conditioning for the experimental groups, so that the subjects were ready physically and mentally to take on specific load administrated to them for the purpose of the study. After one week of conditioning the training was administrated to the experimental groups, which include speed, agility, and quickness drills respectively for three days in a week i.e. (Monday, Wednesday, and Friday). A week schedule was repeated to the proceeding week and the load was adjusted progressively. A detail program is appended.

The procedure adopted for the adjustment of load is as follows: The load intensity was kept low to moderate in first week and increased progressively in proceeding week moderate to high. The frequency of training was thrice in a week. The density was adjusted according to intensity because it is inversely related to intensity. The repetition and sets were increased progressively from first week to proceeding week. The duration of training was 30-45 min. for each experimental day. The duration of warm-up and warm-down were fixed at ten to fifteen minutes respectively. Control group was not allowed to take part in the specific experimental training programme expect they had daily general warming up and had their normal activities. **The following drills were used for this study:**

Speed: Standing stationary arm swings, straight leg shuffle, weighted arm swings, “A” skips, contrast resisted arm swings, skipping for height. **Agility:** Forward roll, carioca, backward roll, side to side with cone reach, sprawl and stand up, side to side with volley. **Quickness:** Hip-twist ankle jumps, MB wall chest passes, in- place tuck jumps, tap drills, pike jumps, one- handed tap drills with partner.

RESULTS AND DISCUSSION

Table – 1Significance of mean gains /losses between pre and post test of SAQT and CG on selected skill performance variables

Variables	Pre test Mean ± SD	Post test Mean ± SD	Mean Diff	SE	N	‘t’
SAQ Training						
Serving Ability	24.87 ±3.91	33.13 ±3.52	8.27	0.72	15	**11.48***
Passing Ability	12.40 ±1.80	14.67 ±1.40	2.27	0.30	15	**7.55***
Control Group						
Serving Ability	25.80 ±4.00	26.53 ±3.27	0.73	0.68	15	**1.08**
Passing Ability	12.93 ±1.67	13.00 ±1.13	0.07	0.45	15	**0.15**

***Significant at 0.05 level (2.14).**

Table –1indicates that the obtained‘t’ ratio on SAQ training group for selected skill performance variables were serving ability (11.48) and passing ability (7.55). The obtained‘t’ ratio on skill performance variables were greater than the critical value of 2.14 df (1, 14). It was observed that the mean gains and losses made from pre-test and post-test were statistically significant. For resulting twelve weeks practice of SAQ training (SAQT) produced significant improvement in serving ability (8.27 $p<0.05$) and passing ability (2.27 $p<0.05$) from the performance of baseline.

The obtained‘t’ ratio on control group for skill performance variables were serving ability (1.08) and passing ability (0.15). The obtained‘t’ ratio on skill performance variables were lesser than the critical value of 2.14 for df (1, 14). It was observed that the mean gains and losses made from pre-test and post-test were statistically insignificant. For resulting twelve weeks practice of SAQ training (SAQT) produced insignificant improvement in serving ability (0.73 $p>0.05$) and passing ability (0.07 $p>0.05$) from the performance of baseline. The pre-test and post-test mean differences of SAQ training (SAQT) and Control Group (CG) on serving ability and passing ability are graphically represented in Fig 1 to Fig 2.

Figure – 1Bar diagram showing the mean values of pre-test and post-test on serving ability

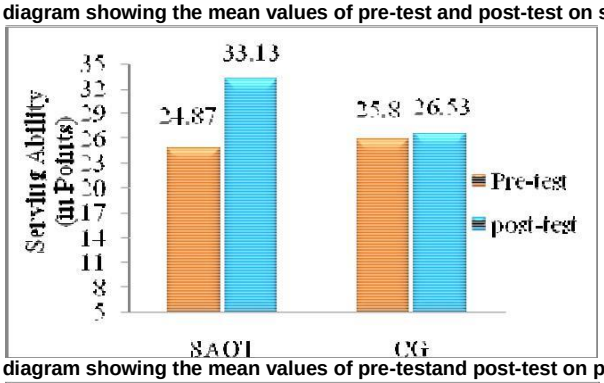


Figure – 2Bar diagram showing the mean values of pre-testand post-test on passing ability

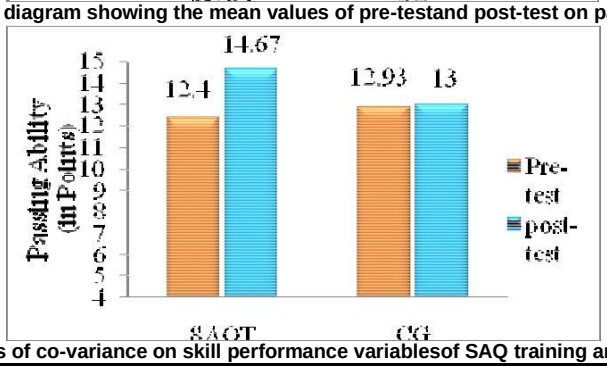


Table – 2Analysis of co-variance on skill performance variablesof SAQ training and control group

Variables	F-value		
	Pre-test	Post-test	Adjusted Mean
Serving Ability	0.42	28.28*	70.09*
Passing Ability	0.71	12.87*	22.08*

***significant level 0.05 level with df (1, 28 = 4.20) (1, 27 = 4.21).**

Table – 2 reveals that the obtained 'F' value of pre-test on serving ability is 0.42 and passing ability is 0.71. Since the observed F values on pre test among the groups namely SAQ training and control group were insignificant as the value was lesser than the critical value 4.20 for df (1, 28) at 0.05 levels.The obtained 'F' value of post-test on serving ability is 28.28 and passing ability is 12.87. Since the observed F values on post test among the groups namely SAQ training and control group were highly significant as the value was higher than the critical value 4.20 for df (1, 28) at 0.05 levels.The obtained 'F' value of adjusted post-test on serving ability is 70.09 and passing ability is 22.08. Since the observed F values on adjusted post test among the groups namely SAQ training and control group were highly significant as the value was higher than the critical value 4.21 for df (1, 27) at 0.05 levels.The adjusted post-test means of SAQ training (SAQT) and Control Group (CG) on speed, agility, quickness, serving ability and passing ability are graphically represented in Fig 3 to Fig 4.

Figure – 3Bar diagram showing the adjusted mean values of SAQ training and control group on serving ability

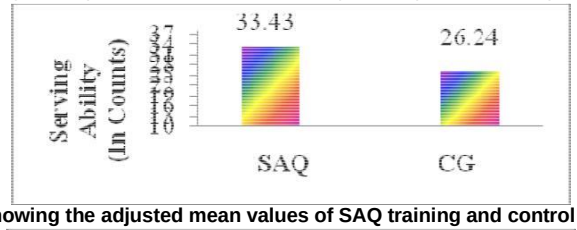
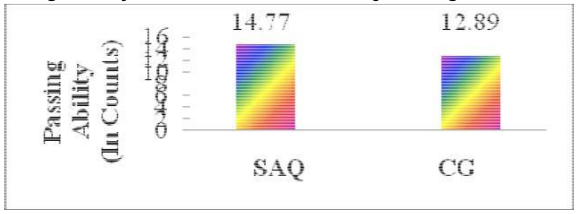


Figure – 4Bar diagram showing the adjusted mean values of SAQ training and control group on passing ability



Discussion Of Findings

After collection of data, appropriate statistical analysis has been done. The results, in general, support the theory that S.A.Q. drills improve skill performance variables of junior volleyball players. We found that experimental group improved significantly which is finding between pre to post test. From the findings it was evident that the treatment given to experimental group found to enhance the volleyball skills performance of junior players in comparison to control group for pre to post (12weeks) test because the tabulated value was found approximately more than required value to be significant. It was observed that the SAQ training significantly improved in above said variables serving ability33.25%, and passing ability18.31 %,).The results of this study support the use of junior players have been exposed first time to S.A.Q. training programme which is highly scientific and systematic in nature because of which optimum adaptation and enhancement in skills performance has been seen. It is proved even by the available literature by Disch et. al., (1980)examined the relationship between a battery of motor performance test and a set of volleyball skill tests designed to discriminate among level of volleyball playing capacity. It was concluded that the motor performance battery was concurrently valid with the selected skill tests. Another study conducted byWhite (1947) conducted a study to grade volleyball playing ability during actual game. Fifteen original skills were reduced to six fundamental skills (pass including set-up, spike, block, serve, offensive tip-shot, and retrievers) opportunity was provided the contestants to make each play at least ten times. The validity of the scores computed from the total successes was .629 for the YMCA group.

Conclusions

Based on the findings and within the limitation of the study it is noticed that practice of selected S.A.Q. drills helped to improve skill performance variables of junior volleyball players. It was seen that there is progressive improvement in the selected criterion variables of experimental groups of volleyball players after twelve weeks of training programme. Further practice of drills also helps to improve other fitness factors i.e. explosive strength, speed, agility and quickness that play major role in skills performance. There was no significant improvement found in skilled performance and other performance variables of control groups, while comparing pre and posttest mean score following conclusion were drawn. The rate of improvement skill performance (serving and passing ability) was higher for the experimental groups in comparison to control groups due to S.A.Q training.

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Effect Of Specific Artistics Gymnastics Skill Training On Selected Motor Variables Of High School Boys

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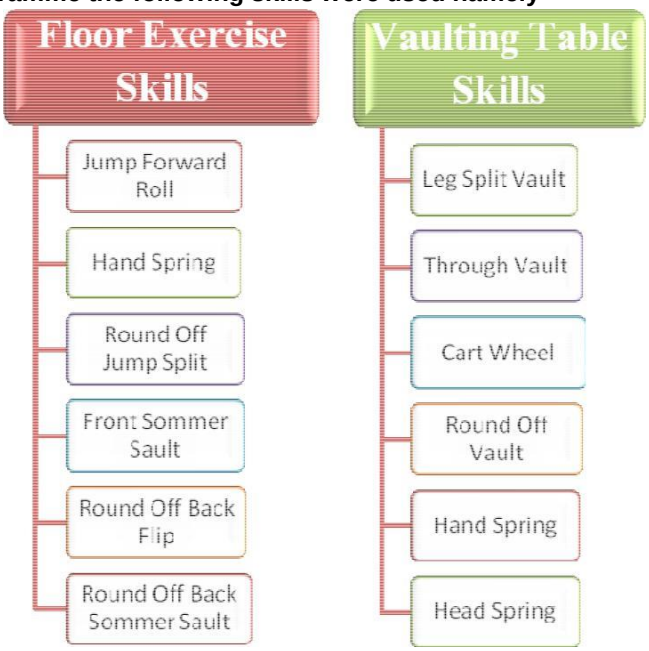
Abstract
The purpose of the study was to find out the effect of specific Artistics gymnastics skill training on selected motor variables of high school boys. For this purpose 40 subjects were selected from swami Shivanandha higher secondary school, Coimbatore age between 13 and 15 years were selected. They were divided into two equal groups namely Artistics Gymnastics Training Group (N=20) underwent Gymnastics skills training and control group (N=20) did not participate in any special training. The data were collected on the selected variable before and after the training programme. The training programme was fixed for 8 weeks, 5 days per week and one training session designed for 60 minutes. The 't' ratio was used to analyze the data. The result revealed that the Artistics gymnastics skill training significantly improved the selected physical fitness variables of adolescent boys.

Introduction
Gymnastics is a mother of all sports and games and its tests your flexibility, balance, and strength. Gymnastics is a very fun & challenging sport. Gymnastics is a sport involving the performance of sequences of movements requiring physical strength, flexibility, and kinesthetic awareness, such as handsprings and handstands. It developed from fitness exercises used by ancient Greek soldiers, including skills for mounting and dismounting a horse, and circus performance skills. Gymnastics is a sport that involves exercises intended to display strength and balance and agility. Gymnastics as an activity sport, has been around for over 2000 years but as a competitive sport it is a little more than 100 years old.One sided predomination of load on the human body is not characteristic in gymnastics (on the floor predominate bilateral leg take-offs and landings (Marinsek, 2010; Cuk & Karacsony, 2004), the same stands for vault (Karacsony & Cuk, 2005)

Artistic gymnastics
Artistic gymnastics is usually divided into Men's and Women's gymnastics, and different groups doing different events. Men compete on Floor Exercise, Pommel Horse, Still Rings, Vault, Parallel Bars, and High Bar, while women compete on Vault, Uneven Bars, Beam, and Floor Exercise. Friedrich Jahn became known as the "father of gymnastics". Jahn introduced the horizontal bar, parallel bars, side horse with pommels, balance beam, ladder, and vaulting horse. **(John, 1982).**

Methodology
For this study forty adolescent boys were selected as subject at random and their age was between 13 -15 years, the selected subjects were divided into two groups of twenty each. They were divided into two equal groups namely Artistics Gymnastics training group (N=20) underwent gymnastics training and control group (N=20) did not participate in any special training. The data were collected on the selected variable before and after the training programme. The training was fixed for a programme of 8 weeks, 5 days per week and one session of 60 minutes per day. Balance was measured by stroke balance test and explosive power was measured by vertical jump. They were selected as dependent variable and it all the subjects were tested on selected criterion variables prior to and immediately after the training period.

For this training programme the following skills were used namely



The total duration of the training programme was fixed for 60mins including warm up and warm down. For every two weeks the mode of exercise will be fixed with two sets of three repetitions.

Analysis Of The Data And Result Of The Study :

Computation of't ratio' of balance and explosive power of experimental group

Variables	Pre mean ± S.D	Post mean ± S.D	Mean. Diff	Std. Error	't' ratio
Balance	0.52 ± 0.04	0.75 ± 0.24	0.23	0.05	4.85*
Explosive power	34.85 ±2.08	38.80 ± 2.33	3.95	0.27	14.83*

*Significant at 0.05 level

Table – 1 indicates that the obtained't' ratio of balance were 4.85 and explosive power were 14.83. It was greater than the table value of 2.09 for degrees of freedom 1, 19. It was observed that the mean gains and losses made from pre and post-test were significantly improved the eight weeks of gymnastic training.

Computation of 't ratio' of balance and explosive power of control group

Variables	Pre mean ± S.D	Post mean ± S.D	Mean. Diff	Std. Error	't' ratio
Balance	0.53 ± 0.12	0.54 ± 0.12	0.01	0.01	1.05
Explosive power	33.45 ± 1.70	33.90 ± 1.80	0.45	0.22	2.02

*Significant at 0.05 level

Table – ii indicates that the obtained't' ratio of balance were 1.05 and explosive power were 2.02. It was lesser than the table value of 2.09 for degrees of freedom 1, 19. It was observed that the mean gains and losses made from pre and post-test were not significantly improved.

Discussion On Findings

The result of the study showed that there was significant improvement on Balance and explosive power by the effect of Gymnastics training. Gymnastics training improves strength, Agility, Co-ordination, spatial awareness, flexibility, and Balance. Injuries are limited and prevented because Gymnastics strengthens joints and well as muscles. Falls are also limited and prevented due to increased body control and spatial awareness and it may be considered for developing the reaction time and coordination. This may be the reason for the result of the present study Nagar, et al., (2010) was to find out the effect of Gymnastics training on Balance. It was concluded that Gymnastics training leads to development of dynamic test of positional Balance.

Kinser AM, et.al(2008) Vibration and stretching effects on flexibility and explosive strength in young gymnasts. Effects of simultaneous vibration-stretching on flexibility and explosive strength in competitive female gymnasts were examined. Twenty-two female athletes (age = 11.3 +/- 2.6 yr; body mass = 35.3 +/- 11.6 kg; competitive levels = 3-9) composed the simultaneous vibration-stretching (VS) group, which performed both tests. Flexibility testing control groups were stretching-only (SF) (N = 7) and vibration-only (VF) (N = 8). Explosive strength-control groups were stretching-only (SES) (N = 8) and vibration-only (VES) (N = 7). Vibration (30 Hz, 2-mm displacement) was applied to four sites, four times for 10 s, with 5 s of rest in between. Right and left forward-split (RFS and LFS) flexibility was measured by the distance between the ground and the anterior suprailiac spine. A force plate (sampling rate, 1000 Hz) recorded countermovement and static jump characteristics. Explosive strength variables included flight time, jump height, peak force, instantaneous forces, and rates of force development. Data were analyzed using Bonferroni adjusted paired t-tests. Simultaneous vibration and stretching may greatly increase flexibility while not altering explosive strength.

The based on the study supports the results of the present study, when analyzing the effects of Gymnastics on Balance and coordination. The result of the study showed the Gymnastic training was significantly improved on Balance and coordination.

Conclusions

1. It was concluded that eight weeks of Artistics Gymnastics training has significantly improvement on balance of adolescent boys.
2. It was concluded that eight weeks of Artistics Gymnastics training has significantly improvement on explosive power of adolescent boys.

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A Case Study On Personality Factor And Performance In Volleyball

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Abstract
The purpose of this study was to analyze the relationship of Emotional intelligence and performance of Volleyball. Emotional intelligence was assessed by Emotional intelligence (EIS) constructed and standardized by Anuket Hyde, Dr. Sanjot Pethe and Dr. Upindar Dhar (2002) Emotional intelligence motivates employees to pursue their unique potential and purpose, and activates innermost potential values and aspirations, transforming them from things they think about, to what they do. Emotional intelligence enables one to learn to acknowledge and understand feelings in ourselves and in others and that we appropriately respond to them, effectively applying the information and energy of emotions in our daily life and work.

Introduction
There are many problems, but one complex and mysterious problem which is faced by the human being since long has been the mystery of his own and other nature and personality. Human beings appear in different shapes and sizes and behave in highly complex ways. Several crores of people are living on the earth. But of them no two people are exactly alike. It is difficult to conjecture what is the human nature of these people. To understand human nature and personality of persons psychologists are continuously striving. It is very important for any human enterprise, more so in case of sports and games, where there is not only kaleidoscopic play of emotions but also name, fame, money and much more at stake. A comprehensive understanding of human nature would contribute in great measure for the all round development of the person, sporting activity and also improving the quality of life.
There are a large number of studies on groups and categories of people in relation to personality, socio economic status, emotional intelligence, value orientation, locus of control, level of aspiration, self confidence, achievement motivation and mental endurance etc. In psychology individuals are studied in a comprehensive in a clinical setting. But one feels that understanding an individual who has made a mark, who has been greatly successful, who has been a highly influential administrator and coach of volleyball activity in Uttar Pradesh has been a fine human being would help in the creation and promotion of such fully functioning and self actualizing individuals.
Experts of personality theories like Allport and Eysenck, who have made substantial studies, consider that every individual is unique in himself. Personality has been called as a mirror of the culture. For the growth and development of an individual's mind and personality, genetic and environmental circumstances play major roles. Eventually, personality development is the outcome of a process of interaction betweengenetic inclinations and environmental conditions. The human being by nature first tries to accommodate himself with the environment around him and then he starts striving to establish his superiority over it.Sigmud S. Freud, Maslow, Allport and other have been shown the way in this regard by case studies of individuals. The findings of these psychologists have greatly impacted the world view; the explanation and modification of human behavior for better such studies always throw new light and provide new understanding of people, their nature, personality and social achievement etc.

Sample Design
Former International volleyball player Mr. Ranveer Singh (Arjuna Awardee) of Uttar Pradesh was the sample for present case study.

Objective
To find out the Emotional intelligence of Mr. Ranveer Singh.

Hypothesis

Mr. Ranveer Singh would have high level of Emotional intelligence.

Significance Of Study

1. This study assumes great significance given its comprehensive study of an international volleyball player such as Mr. Ranveer Singh.
2. This study will reveal the impact Emotional intelligence of the player in relation to personality.

Tool

Standardized test was used in the present study.

1. **Emotional Intelligence Scale (EIS)**

   The scale consists of 34 items. The scale measures the factors self awareness, empathy, self motivation, emotional stability, managing relations, integrity, self development, value orientation, commitment and altruistic behavior. The reliability of the scale was determined by calculating reliability coefficient was found to be 0.88. The validity is 0.93.

Scoring

The test was scored according to the instruction given in the manual. The scoring was done manually.

Analysis Of Emotional Intelligence Factors

Table No. IScores of Emotional Intelligence Factors

Sl.No.	Factors	Factors Name	Scores	Category
1	A	Self awareness	17	High
2	B	Empathy	20	High
3	C	Self motivation	25	High
4	D	Emotional stability	16	High
5	E	Managing relations	16	High
6	F	Integrity	12	High
7	G	Self development	8	High
8	H	Value orientation	9	High
9	I	Commitment	9	High
10	J	Altruistic behaviour	8	High

Table No. I present the scores of emotional intelligence factors. The scores of emotional intelligence factors like self awareness (17), empathy (20), self motivation (25), emotional stability (16), managing relations (16), integrity (12), self development (8), value orientation (9), commitment (9) and altruistic behaviour (8) clearly indicates that the subject having high level of emotional intelligence in all the ten factors.

Conclusions

Self Awareness Mr. Ranveer Singh has high ability to empathize with, feel comparison for, validate, motivate, inspire, encourage and soothe others. He has high (more) ability to make intelligent decisions using a healthy balance of emotions and reason. He was neither too emotional nor too rational. He has high ability to manage and take responsibility for one's own emotions, especially the responsibility for self motivation and personal happiness. He has high ability of recognizing and naming one's own emotions and he has high knowledge of the cause of emotions and has high ability of recognizing the difference between feelings and actions.

Mood Management

Mr. Ranveer Singh has high frustration tolerance ability and anger management, eliminates verbal pull downs, fights and group disruptions, better able to express anger appropriately without resorting to violence, fewer, suspensions or expulsions, less aggressive or self destructive behavior, more positive feelings about self, school and family, better at handling stress.

Self-motivation

Mr. Ranveer Singh is more responsible, better able to focus on task at hand pay attention, less impulsive, more self controlled and improved scores on achievement tests.

Empathy

Mr. Ranveer Singh is afflictive person and he made good companion because he was pleasant and agreeable. Other feel comfortable him and like him in other words, affiliate persons have superior emotional and social skills in dealing with others, derive gratification and reward from their interpersonal contacts, and tend to be source of happiness to others.

Managing Relations

Mr. Ranveer Singh has more popular and outgoing friendly and involved with peers, more sought out by peers, more concerned and considerate, more "Prosocial" and harmonious in groups, more sharing, cooperation and helpfulness, more democratic in dealing with others.

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Effect Of Yoga And Swimming In Reducing Anxiety: A Comparative Study

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Abstract:
Different exercise modules and yogic practices have been claimed to reduce anxiety. However, there are very few longitudinal studies to assess and to compare improvement in mental health of subjects performing yogic asanas and breathing exercises versus those performing endurance exercises like swimming. Therefore, present study was designed to compare reduction in anxiety levels with yogic postures and breathing exercises with that of swimming. This study was conducted in the department of physiology. Study design used was prospective randomized comparative study. Hundred volunteers were included in the study and randomly divided into two groups, one practiced yogic asanas and breathing exercises and other practiced swimming for 12 weeks. Beck's anxiety inventory was used to asanas anxiety level of subjects. Anxiety levels were assessed prior to the training and then after 12 weeks of training. The total score was calculated from 21 items and high scores indicated higher anxiety levels. The average anxiety scores decreased significantly ($p<0.0001$) in both the groups after training. In yoga group, average pretraining score of 24.25 decreased to post training score of 20.27, whereas in swimmer group it decreased from 23.57 to 20.8. However, the decrease in anxiety was similar with both modalities of exercise ($p>0.05$).
Key words: anxiety, exercise modules, Swimming, Yoga.

Introduction:
Anxiety is pathological when excessive and persistent, or when it no longer serves to signal danger. It is often considered to be a major component of unhealthy lifestyle and possibly contributes significantly to the pathogenesis of not only psychiatric but also systemic disorders such as cardiovascular disease, diabetes mellitus and bronchial asthma (Gupta et al, 2006). However, randomized prospective comparative studies between effects of endurance exercises and yoga (postures and pranayama) on reduction in anxiety are few. Therefore, the present study was undertaken to evaluate and compare the efficacy of swimming and yoga as modules (1 hour daily, 6 days a week) for reducing anxiety.

Material And Methods:
Study Set Up: The study was conducted in the department of physiology in Kakatiya medical college, Warangal in co ordination with Dhronacharya fitness & Health Centre, Warangal managed by Sri Datta Sai Educational Society, Warangal.

Study Groups: Healthy males and females with normal physical examination and with sedentary occupation between 18 and 40 years of age were included in the study. The volunteers from the general population were motivated to participate in the study by explaining plan of the study to them. The subjects were included purely on the voluntary basis. After screening and fulfillments of inclusion and exclusion criteria, volunteers were included in the study. Initially 100 volunteers were recruited but at the end of the study. Yoga group consisted of 41 subjects (n=41) out of which 16 were males and 25 females. Swimmer group comprised of 40 subjects with 18 males and 22 females. Volunteers had not been engaged in yoga practice or swimming nor were they doing any physical exercise at least during 3 years preceding the study. Subjects in non-sedentary occupations, smokers, alcoholics, pregnant female, postoperative patients and subjects suffering from any hernia, cardiovascular disorder, any active respiratory tract infection or history of respiratory tract infection during previous 6 weeks, were excluded from the study by detailed history and thorough clinical examination.

Study Protocol:Clearance of institutional ethics committee was obtained. After selection of the subjects, they were explained about the detailed plan of work and aim of the present research project. A written informed consent was obtained from them. One hundred volunteers were divided into cohorts of 10 subjects each and were randomly assigned (block randomization) to undergo either yogic training or swimming for a duration of 12 weeks. Before the actual training period, baseline parameters were recorded in a week's time for one cohort. In the same week the subjects of that cohort were motivated for the exercise regimen they had to follow during the entire 12 weeks period. After 12 weeks exercise by all ten subjects in that cohort, all the parameters were studied again. After baseline parameters sere recorded for one cohort and the training started for that cohort, the next cohort was subjected to the same treatment. Out of 100 subjects, 9 from the yoga group and 10 from

the swimmer group dropped out in due couse of the study. Thus, at the end of the study, data of 41 subjects from yoga group and 40 subjects from swimming group were analysed. The subjects of yoga group were instructed not to practice any yogic technique other than the prescribed ones and swimmer group was advised to refrain from other physical exercises during the study. We supervised the subjects early in the morning (5 – 6 am) during yoga classes and swimmers from 6 -7 am every day during the training period. Participants of both groups were allowed to do their routine activities during the study period. The subjects were taught yogasanas and pranayamas and then they practiced the same, 6 day/week for 60 minutes daily, for a total duration of 12 weeks. Iyengar yoga techniques were followed by the yoga trainers (Iyenger, 1995) different yogasanas viz. tadasana, konasana, utkatsana, sarvangasana, balasana, chakrasana, padmasana, dhanursana, makarasana, pachimottanasana, vajrasana, and shavasana were practiced for 40 min. and pranayamic breathing exercises with purak, rechak and kumbhak, anulom-vilom, bhastrika, bhramari pranayam and kapalibhati were practiced for 20 min. swimming was practiced 6 days/week for 60 minutes daily. Swimming comprised freestyle in first 6 weeks and freestyle and breast stroke in last 6 weeks including 10 min of floating on the water. For novice swimmers, continuous swimming for 60 min is difficult: therefore, intermittent floating with deep slow breathing was introduced. It also helped to keep similarity with yoga group who practiced shavasana for 10 min. an important limitation of the methodology was inability to compare the intensities of two modalities of exercise during 12 weeks duration. These inabilities was because of the fact that unlike endurance exercise, intensity of exercise for yogic asanas and pranayama is not directly related with exercise and post-exercise heart rate.

Measurements Of Anxiety:

Beck's anxiety inventory (BAI) was used for the assessment of anxiety levels of subjects of both the exercise groups. Beck's anxiety inventory scale has good reliability and validity with high internal consistency and item total correlations ranging from .30 to .71 and the correlation of BAI with a set of self report and clinician rated scales are also all significant. Each subject was properly explained the procedure for filling the inventory; they filled the inventory during initial visit for basal parameters recordings prior to the training and post training parameters after 12 weeks for training. The inventory consisted of 21 questions, which the subjects were asked to fill within 10-20 minutes. Against each question: columns labeled 0, 1,2,3 were printed and subjects were required to mark (√)in the column which they felt appropriate. The total score of each column helped in the calculating the grand total of all 3 columns. The total score for all 21 questions was calculated. High scores indicated higher anxiety levels. Maximum grand sore attainable was 63. a grand total between 0.21 indicated very low anxiety, between 22 and 35 indicated moderate anxiety and a score that exceeded 36 was considered a potential cause for concern.

Statistical Analysis:All the data obtained was presented group-wise by descriptive statistics using mean, and standard error of mean. For differences in sex wise composition of two study groups, Chi squared test was used. For each parameter in both yoga and swimming groups before and after training period of 12 weeks, data distribution was tested for normality of distribution by kologorov smimov test. As the data distribution was not normal, data were log converted and again tested for normality of distribution. As the data distribution (anxiety scores and log converted data) was not normal the paired data before and after the exercise for both yoga and swimming groups was tested by Wilcoxon signed rank test. The change in anxiety scores with exercise was studied by calculating delta i.e. difference in value before and after the exercise of both modalities. The statistical significance was considered at probability value less than 0.05. The statistical calculations were done using Data analysis tool of Microsoft excel and systat 12.

Results:

Yoga and swimming groups were statistically comparable with respect to age and sex distribution as shown in table 1. The average anxiety scores decreased significantly with both modalities of exercise after 12 weeks training. The decreases in average anxiety socres were similar in with both yoga and swimming as shown Table III

Table 1: comparison of the yoga and swimming groups

	Yoga (n=41)	Swimming (n+40	Statistical significance
Age (years)	28.439	27.7	T=0.7338, df=79
Mean SE	±1.41	±1.35	P=0.7067
Males (n)	16 (39.0%	18 (45%)	Phi square =0.2968, df=1
Females (n)	25 (61.0%	22 (55%)	P=0.5858

Discussion:

Decrease in anxiety scores were observed following 12 weeks of yoga as well as swimming with almost similar effects with both yoga and swimming though percent improvement in anxiety scores was slightly better with yoga. Thus the hypothesis that a change in anxiety would be different with yoga and swimming was not supported.

Table II: effects of exercise on anxiety scores of Becks's anxiety inventory in yoga and swimming groups.

Parameter	Exercise modality	Baseline before exercise (Mean ± SEM)	After 12 weeks (Mean ± SEM)	Wilcoxon signed rank test
Anxiety score (Beck's)	Yoga (n=41)	24.25 ± 0.936	20.275 ± 1.084	Z=5.19 P<0.0001
	Swimming (n=40)	23.575 ± 1.062	20.8 ± 1.014	Z=5.3 P<0.0001

Table III. Comparison of effect of exercise on anxiety scores of Beck's anxiety inventory in yoga and swimming groups

Parameter	Exercise modality	Change in anxiety scores after training(%)	Mann-Whitney U-test
Anxiety score (Beck's)	Yoga (n=41)	-3.975 (-16.39%)	z=-1.73 P=0.0836
	Swimming (n=40)	-2.775 (-11.77%)	

Moderate intensity exercise may not optimize fitness and sport training benefits, but it has consistently been associated with desirable mood changes (Berger & Owen 1988: Cox et al, 2001).Short term mood improvements have also been reported after the yoga classes. Yoga produces many beneficial emotional, psychological and biological effects and it may be easy to implement, a yogic relaxation posture, has been reported to control psycho-physiological stress. There is an altered autonomic homeostasis in response to real life stressors with a shift towards cardiac sympathetic activation and vigil withdrawal. This shift towards sympathetic may be the reason of anxiety. Cardiac autonomic modulation at rest in subjects engaged in regular exercises goes in parasympathetic favor with substantial increase in high frequency component of heart rate variability and reduced low frequency. High frequency ratio decrease in sympathetic activity has also been reported subjects doing yoga practice. This favorable autonomic modulation injects engaged in physical activity may be responsible reduced response to stress in the form of reduced society. With limitation of measuring intensity of exercise in yoga for comparison with swimming, the evaluation of swimming and yoga modules for reducing anxiety was done in the present. However, the time for the intervention in both modules was same. We found similar reduction of anxiety by these modules of exercises though the results of the present study needs further confirmation on a larger sample size as adequacy of sample size was not tested in the present study. Similarly inclusion of only randomly selected subjects in such type of longitudinal study from rural population is difficult; therefore, generation of the results of present study must take into account this limitation. Our finding that reduction in anxiety is similar swimming and yogic exercise module is consistent the finding of Cox(2000) who have reported that anxiety is not associated with mode of exercise.

Conclusion

In conclusion, yoga as well as swimming significantly reduces stress within 12 weeks, however, reduction in anxiety similar with both yoga and swimming. Therefore, yoga and swimming can be advocated for reduction of anxiety. In addition, other factors like cost activeness, facilities for recreational exercise, physical constraint, training facilities and ability of any exercise regime to keep continued motivation and interest of the trainees should also be taken into account for exercise prescription.

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A comparative study of anthropometric profile and body composition of soccer trainees of different ages

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Abstract
Soccer is the most popular sport in the world and is performed by men and women, children and adults with different levels of expertise. Soccer performance depends upon a myriad of factors such as technical/biomechanical, tactical, mental and physiological areas. A group of soccer players (training) comparing of 56 in number are being trained at a regular interval. 35 out of 56 players who voluntarily agreed to participate in this study have been included. They have been briefed about the study. The purpose of the study was to compare the different anthropometric profile & body composition of the soccer trainee of different ages. Standard Statistical tools were used for generalized the fact. From the study it was revealed that The body composition of the subject in terms of percentage of fat and fat mass are more compare to the value of a national and international players.

Key Words: Soccer, anthropometric profile, Body composition, percentage of fat and fat mass.

Introduction

Soccer is the most popular sport in the world and is performed by men and women, children and adults with different levels of expertise. Soccer performance depends upon a myriad of factors such as technical/biomechanical, tactical, mental and physiological areas. One of the reasons that soccer is so popular worldwide is that players may not need to have an extraordinary capacity within any of these performance areas, but possess a reasonable level within all areas. However, there are trends towards more systematic training and selection influencing the anthropometric profiles of players who compete at the highest level. As with other activities, soccer is not a science, but science may help improve performance. Efforts to improve soccer performance often focus on technique and tactics at the expense of physical fitness. During a 90-minute game, elite-level players run about 10 km at an average intensity close to the anaerobic threshold (80-90% of maximal heart rate). Within this endurance context, numerous explosive bursts of activity are required, including jumping, kicking, tackling, turning, sprinting, changing pace, and sustaining forceful contractions to maintain balance and control of the ball against defensive pressure.

Top soccer players do not necessarily have an extraordinary capacity in any of the areas of physical performance. Soccer training is largely based on the game itself, and a common recruitment pattern from player to coach and manager reinforces this tradition. New developments in understanding adaptive processes to the circulatory system and endurance performance as well as nerve and muscle adaptations to training and performance have given rise to more effective training interventions. Endurance interval training using an intensity at 90-95% of maximal heart rate in 3- to 8-minute bouts have proved to be effective in the development of endurance, and for performance improvements in soccer play. Strength training using high loads, few repetitions and maximal mobilization of force in the concentric mode have proved to be effective in the development of strength and related parameters. The new developments in physical training have important implications for the success of soccer players.

Objective of the Study

To study the physical parameters viz. height, weight, BMI, and physiological variables, i.e. blood pressure (systolic & diastolic both in resting condition).

To compare the different anthropometric profile & body composition of the soccer trainee of different age

Procedure And Methodology

Selection Of Sites:- After visiting 4 training club of soccer in different places of Kolkata, the author had selected and restricted the study nearer to Dankuni area in the district of Hooghly, West Bengal.

Selection Of Subjects:-A group of soccer players (training) comparing of 56 in number are being trained at a regular interval. 35 out of 56 players who voluntarily agreed to participate in this study have been included. They have been briefed about the study.

Field Data Collection:-Following data have been collected in the relevant equipment.

1. **Age:-** The age of the subject was calculated from their date of birth and then their age in decimal fraction was calculated. It was also recorded from their record book of club register. It is expressed in kg.
2. **Height*:-*** Body height was measured by using anthropometric rod adopting standard procedure. It is expressed in cm.
3. **Body Fat and Lean Body Mass Estimation using Skin Fold Caliper*:-*** Skin Fold Caliper was used to measure the skin fold thickness. The skin fold measurement were taken at the specified sites that is forearm, biceps, triceps, sub scapular, supra iliac, thigh and calf by standard procedure from the right side of the body. From the skin fold thickness, body density was calculated by using the predictive equation proposed by Petroski. Then percent body fat was estimated from the equation proposed by SIRI. Then fat mass and LBM was calculated from the body weight.

Body Density = $1.10726862 - 0.00081201(\sum 4sT^2) + 0.00000212(\sum 4sT)^2 -$
$0.00041761(age)$ Where $4sT^2$ = supra iliac + sub scapular + triceps + calf
4sT = supra iliac + sub scapular + triceps + biceps
Percent Body Fat = (495/ body density – 450)
Fat Mass (kg) = Body Weight (kg)*[%fat/100]
LBM (kg) = Body Weight (kg) - Fat Mass (kg)

4. **Bone Mass and Percent Bone Mass Estimation using a Sliding Caliper *:-*** A Sliding Caliper was used to measure the bony diameters from the right side of the body. The bone width measurements were taken at some specified sites of the body that is wrist, humerus, femur and ankle by standard protocol. After taking the measurements, bone mass was calculated by using the Mateigka Equation. After calculating the Percent Bone Mass was also calculated.

Weight of Bone or Ossa:-
$Ossa = O^2 * L * K^1$
Where, L is the height of the subject
$K^1 = 1.2$ (constant)
$O = (O1 + O2 + O3 + O4)/4$
O1 = maximum diameter of humerus bicondyler (cm)
O2 = maximum diameter of femur bicondyler (cm)
O3 = maximum diameter of wrist (cm)
O4 = maximum diameter of ankle (cm)
Percent Bone Mass = Bone Mass (kg)/ Body Weight*100

5. **Muscle Mass and Percent Muscle Mass Estimation using a Standard Measuring Tape:-** A Standard Measuring Tape was used to measure the circumferences from the right side of the body. The circumference measurements were taken at some specified sites of the body that is forearm, arm, thigh and calf by standard protocol. After taking the measurements, muscle mass was calculated by using the Mateigka Equation. After calculating the Percent Muscle Mass was also calculated.

Skeletal Muscle:-
$M = R2 * L * K3, R = (R1 + R2 + R3 + R4)/4$
Where, L = height of the subject (cm),R1 = corrected radius of upper arm (cm),R2 = corrected radius of forearm (cm) R3 = corrected radius of thigh (cm)R4 = corrected radius of calf (cm)K3 = 6.5 (constant)
The corrected radii can be calculated as follows:-
Circumference = 2*(22/7)*ROr R = c/2(22/7) Corrected R = [c/2(22/7) – ½ skin fold]Percent Muscle Mass = Muscle Mass (kg)/ Body Weight (kg)*100

Statistical Analysis:-

The parameter studied in the present investigation where subjected to statistical analysis under student t-test (two tail), mean, SD, etc.

Results And Discussions Of The Findings

Physical characteristics of the soccer players of three ages (17 year,18 year 19 year)having under study are summarize in table-1 A,B and C. It can be seen from the table the mean value of the body weight of all three ages were 59.46, 60.63, 61.49 respectively. The average heights of all three ages were 168.33, 168.68, 169.6 respectively. Similarly the average body mass indexes (BMI) of all three ages were 21.30, 22.41 and 22.69 respectively. It is interesting to note as the age goes on increasing the valve of all three parameters mention above were increasing. This may be due to the fact the subject under study are in the growth and developmental phase.The value of BMI(Kg/M^2) of all the ages varies from 21.30 to 22.69 (Kg/M^2).This indicate the subject under study are neither undernourished or over nourished and this value according to WHO with a cut off mark of Asian it categorized as normal.

Table-1 A, B, C Physical characteristics of the soccer of three ages having under study.

Table 1A

Variable	17 YEAR			
	Mean	±SD	Range	
			Upper	Lower
Height(cm)	168.49	3.45	173.4	163.4
Weight(Kg)	59.33	2.05	62	56
BMI(Kg/M^2)	21.30	0.56	22.3	20.6

Table 1 **B**

Variable	18 YEAR			
			Range	
	Mean	±SD	Upper	Lower
Height(cm)	168.33	3.45	173.8	163.0
Weight(Kg)	59.46	2.05	63	58
BMI(Kg/M^2)	22.41	0.78	22.1	20

Table 1C

Variable	19 YEAR			
	Mean	SD	Range	
			Upper	Lower
Height(cm)	169.6	±3.85	174.6	162.9
Weight(Kg)	61.49	±2.85	63	59
BMI(Kg/M^2)	22.69	±0.61	22.4	21.1

Table-2 A, B, C Comparison of different Anthropometrical parameter between three ages of the player under study.

Table2A17years

Variable	Mean	±SD	Range	
			Upper	Lower
Biceps(mm)	11.56	1.62	15.3	9.5
Triceps(mm)	14.53	1.78	15.7	12.3
Subscapular(mm)	18.64	2.71	22.4	15.4
Suprailiac(mm)	20.47	2.87	27.3	16.4
Lean body mass(Kg)	47.08	2.25	48.63	4237
Fat mass(Kg)	13.42	0.67	14.46	12.20
%Fat mass(%)	22.17	1.7	26.66	20.33
Bone mass(Kg)	8.92	0.31	9.32	7.39
%Bone mass(%)	14.64	0.83	15.97	12.74
Muscle mass(Kg)	14.75	2.01	17.34	12.19
%Muscle mass(%)	26.47	1.54	24.13	29.01

Table2B 18years

Variable	Mean	±SD	Range	
			Upper	Lower
Biceps(mm)	12.38	2.77	19	9.8
Triceps(mm)	14.8	2.901	21.6	10.5
Subscapular(mm)	19.01	3.40	24.2	11.5
Suprailiac(mm)	21.49	3.21	25.5	14.5
Lean body mass(Kg)	45.69	2.51	50.07	42.37
Fat mass(Kg)	13.74	1.14	16.46	11.4
%Fat mass(%)	22.82	1.85	24.94	18.42
Bone mass(Kg)	8.26	0.88	9.83	7.05
%Bone mass(%)	13.88	1.69	15.67	10.95
Muscle mass(Kg)	16.33	2.34	19.30	14.11
%Muscle mass(%)	27.21	3.79	30.12	25.01

Table2c 19years

Variable	Mean	±SD	Range	
			Upper	Lower
Biceps(mm)	13.44	2.30	19	11.4
Triceps(mm)	16.33	2.30	22.5	14.5
Subscapular(mm)	19.70	2.35	24.2	2.35
Suprailiac(mm)	22.27	2.75	27.3	17.3
Lean body mass(Kg)	42.26	8.77	49.54	43.06
Fat mass(Kg)	14.19	0.93	16.46	12.91
%Fat mass (%)	24.03	1.28	26.66	22.59
Bone mass(Kg)	8.74	0.74	9.83	7.39
%Bone mass (%)	14.53	1.49	17.61	12.74
Muscle mass(Kg)	20.83	2.91	22.69	18.34
%Muscle mass (%)	24.71	3.99	20.45	27.69

Table 2 A, B, C represents the difference of physical parameters between three ages of player under study. The value of different variable like biceps, triceps, suscapular and supraileac are 11.56, 14.53, 18.64, 20.47 respectively in case of age 17 years. When the above values are compare with the ages of 18 years and 19 years it is found to observed that there is a increment in value of all ages. This may be due to the fact the subject under study were in the growth and developmental phase. The result of the above parameters when subjected to significant test ('t' test) the differences of all the parameters of ages are not statistically significant.

Table value of body composition of all considering the fat mass(Kg),body fat%, bone mass(Kg),bone mass%, muscle mass(Kg),muscle mass% as depicted from the same table that is table-2 A,B,C.T he value of fat mass (Kg),body fat%, bone mass(Kg),bone mass%, muscle mass(Kg), muscle mass% are 13.42, 22.17, 8.92, 14.64, 14.75 and 26.47 respectively in case of 17 years and the value of above parameter in case of 18 years and 19 years are 13.74, 22.82, 8.26,13.88, 16.33, 27.21and 14.19, 24.03, 8.74, 14.53, 20.83, 24.71, 34.71 respectively. The value of all parameters though have a increasing tendency statistically they are not significant. That means the above parameters did not grow up with ages. This may be due to the fact the nutritional requirement was not adequate enough for the soccer undergoing training.

Conclusions

The present study is under taken on a group of players (soccer trainee) having three different age group mainly 17, 18 and 19 years.
The physical profile of the subject under study can be categorized as though normal as per recommendation of WHO considering the value of BMI yet for athletes communities. The gross value of height, weight should have been proportionally more.
The body composition of the subject in terms of percentage of fat and fat mass are more compare to the value of a national and international players. The value of bone mass and muscle mass indicate a lower value than the expected.

The national statuses of the player were not at all desired level and needs to be improved

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Study Of The Differences In Socio Economic Status Of Women Wrestlers Of Middle Weight Categories Difference In Five Components Of Physical Fitness Of Sai

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Abstract: The purpose of the present study was planned to find out the differences in socio economic status of women wrestlers of Middle Weight categories difference in five components of physical fitness of SAI centers in Northern India. The samples consisted of 60 in all who belonging to different socio-economic status and participated in different levels of wrestling. Their Selected physical fitness component was taken with standard test of each component. For analysis of the data Mean & SD were calculated and to examine the significance difference between the group mean of different physical fitness components, independent samples't' test was applied, and level of confidence was set at 0.05 level. Findings out that in that Middle Weight category wrestlers belonging to High Socio-Economic Status are significantly better in Strength as compare to other Socio-Economic Status wrestlers of this category. In other components of Physical Fitness, no significant differences were found between High Socio-Economic Status, Middle Socio-Economic Status and Low Socio-Economic category of wrestlers.

Keywords: Speed, Strength, Agility, Endurance, Power and Socio economic status.

Introduction:

Socio-economic conditions have an important role in developing the child's personality. This also serves as the basic factor for further development. The environment condition of home sizes of the family, neighbourhood and general conditions of living greatly influences the child's outlook, attitude, interest initiative drive etc. the social behaviour of adolescents is related functionally to the position their family occupy in the social structure of the community. **Jaywantr Namdeo Vidhate (2011)** studied the Effect of Socio-Economic Status on Mental Health of School going players. **Shivasharanappa D. Ryagi (2011)** conducted that the high socio economic status would be highly advantageous for an individual as he enjoys the better standard of living, quality education, high income, positive self image, high dignity and status in the society, good training facilities and the subsequent high self confidence which invariably helps her to gain positive personality traits and higher achievement motivation. **Deol Singh Nishan, Gill Manmeet and Singh Balwinder (2010) studied** in his attempt has been made to study the socio-economic background in relation to the performance of Punjabi university volleyball players. **Khan Anis A. Nade P.U. and Josi Mahesh (2009)** studies in his studied socio economic status of state level volleyball players of Maharashtra. **Singh Khajan (2001)** investigated the family background to state level volleyball players Himachal Pradesh.

Method

Sample: The investigation is survey type where the investigator conducted the survey on wrestlers of SAI centers of Northern India. The data was collected on through Questionnaire made by Uppadhaye & Sexsena. In total 60 number of wrestlers consisting of three categories i.e. Low, Middle and High Socio-Economic Status who had participated in various wrestling competition. The collected data was statistically analyzed to find out the results.

Tool Used: To collect the data the following tools were employed by the investigator for the collection of data: **Socio-Economic Status Scale (Sunil Kumar Uppadhay and Alka Sexena 2010)**

Administration of the test: The data was collected by administration of the test. Then test were conducted with the help of wrestling coaches of SAI centers of northern India, the test were explained by giving a demonstration to the subjects. A trial chance was also given to the subjects for each the test items. Sufficient warm-up time was also given to the subjects.

Reliability of the test: The reliability and Validity for various test items have been 0.83 and 0.78 which is recommendable and reliable to collect the data.

Statistical Technique: Statistical technique such as Mean, SD., SED, and t-ratio were used to find significance differences in selected physical fitness components. The magnitude of significant differences for each item for the three weight categories was observed through the mean score of each category.

Results And Disscusion

Differences in five physical fitness components for middle weight category of wrestlers belonging to high socio-economic status, middle socio-economic status and low socio-economic status are shown in table 1 to 3.

Table No- 1
T-Ratio Between Low Ses (25) And Middle Ses (27) Wrestlers On Five Elements Of Physical Fitness For Middle Weight Category

S. No.	Elements	Mean		Sd		T-Ratio
		Low	Middle	Low	Middle	
1	Strength	7.36	7.55	0.48	0.64	1.22
2	Speed	7.92	7.90	0.43	0.44	0.13
3	Agility	23.08	22.70	1.72	1.54	0.89
4	Power	2.41	2.37	0.26	0.26	0.48
5	Endurance	3.06	3.10	0.30	0.35	0.39

Table No- 2
T-Ratio Between Low Ses (25) And High Ses (6) Wrestlers On Five Elements Of Physical Fitness For Middle Weight Category

S. No.	Elements	Mean		Sd		T-Ratio
		Low	High	Low	High	
1	Strength	7.36	8.18	0.48	0.87	3.37
2	Speed	7.92	7.81	0.43	0.32	0.64
3	Agility	23.08	23.52	1.72	1.72	0.63
4	Power	2.41	2.33	0.26	0.28	0.77
5	Endurance	3.06	2.96	0.30	0.38	0.76

Table No- 3
T-Ratio Between Middle Ses (27) And High Ses (6) Wrestlers On Five Elements Of Physical Fitness For Middle Weight Category

S.No.	Elements	Mean		Sd		T-Ratio
		Middle	High	Middle	High	
1	Strength	7.55	8.18	0.64	0.87	2.22
2	Speed	7.90	7.81	0.44	0.32	0.53
3	Agility	22.70	23.52	1.54	1.72	1.29
4	Power	2.37	2.33	0.26	0,28	0.45
5	Endurance	3.10	2.96	0.35	0.38	0.94

Table 1 to 3 shows that only two t-ratios are significant at 0.05 level. In table no. 2, t= 3.37 and table no. 3, t=2.22 is significant for strength component. Other t-ratios are not significant at 0.05 level. So, null hypothesis is rejected for strength component of physical fitness. t= 3.37 shows that middle weight wrestlers belonging to High Socio-Economic Status have more Strength (M=8.18) as compare to wrestlers belonging to Low Socio-Economic Status (M= 7.36). t= 2.22 shows that middle weight wrestlers belonging to High Socio-Economic Status have more Strength (M=8.18) as compare to wrestlers belonging to Middle Socio-Economic Status.

Conclusion

Thus, it can be concluded that Middle Weight category wrestlers belonging to High Socio-Economic Status are significantly better in Strength as compare to other Socio-Economic Status wrestlers of this category. In other components of Physical Fitness, no significant differences were found between High Socio-Economic Status, Middle Socio-Economic Status and Low Socio-Economic category of wrestlers.

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Analysis Of Body Composition Variables Among State Level Basketball, Football And Volleyball Players

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Abstract
Much of the focus has been directed toward sports such as basketball, volleyball gymnastics, diving, wrestling, long-distance running, and other aesthetic sports where a lower body mass has been perceived as a means of enhancing performance to find out the differences in body composition variables. The aim of this study was to analyze the body composition variables, BMI and percent body fat among basketball, football and volleyball players. To achieve the purpose of this study, the investigator selected randomly selected 30 basketball players, 30 football players and 30 volleyball players, who participated at state level competitions held at Hyderabad during the year 2012 and their mean age was 20.6 years with standard deviation of $\pm$ 1.4 years. The data on BMI and percent body fat were compared for the differences existed among the players using statistical tool ANOVA. The study proved that though there seem to be significant differences in BMI and basketball players tend to have more than football and volleyball players, there was no significant difference in percent body fat among the players. Hence, it was concluded that the difference noted in BMI was absorbed in body due to the vigorous playing situations of the players.

Introduction
The integral relationship between performance in sport, body weight, and overall health of the athlete has received considerable attention over the past several years. Much of this focus has been directed toward sports such as basketball, volleyball gymnastics, diving, wrestling, long-distance running, and other aesthetic sports where a lower body mass has been perceived as a means of enhancing performance. It is important to note, however, that issues related to low body mass represent only one end of the body mass continuum encountered in sport. In contrast, sports such as football face the challenge of increasing body mass as a means of enhancing performance. Although anecdotal observation suggests that over the past 10 years in football a ‘‘bigger is better’’ concept has pervaded through all playing positions at all competitive levels, there is limited evidence to support this claim. Furthermore, and perhaps of more importance, it is not clear whether this increase in body size has been the result of an increase in lean body mass or of an increase in body fat. It is logical to assume that an increase in body mass accompanied by an increase in fat-free mass would be particularly important in enhancing the performance of players at a number of playing positions. However, as previous work has indicated (Bale et.al. (1994) , Burke et.al. (1980) , Crews et.al. (1978) , Kelley and Wickkiser (1975) , should this increase in body weight be the result of an increase in body fat, the potential negative effects on performance and long term health implications cannot be overlooked. While in the game of football there seemed to be a “bigger is better”, in basketball, the conception is different that a “taller is better” and in volleyball medium sized who can be able attack and defend in the playing situations.

Tsunawake et al. (2003) made a study to evaluate the body composition in 12 members of the women volleyball team and 11 members of the women basketball team that won the championship in the Japan Inter High School meets and found no significant difference was observed in any measured item of the physique, skinfold thickness or body composition between the volleyball players and basketball players. Monyeki et al. (2005) study was to determine the relationships between the body composition characteristics, body mass index (BMI), sum of skinfolds (SSF), % body fat (%BF), fat-free mass (FFM) and waist-to-hip ratio (WHR), and nine physical fitness items in undernourished rural primary school children in Ellisras, South Africa and found body composition was significantly related to physical fitness, but not always in the expected direction. Brodersen and Boniface (2007) found that school-based physical education (PE) is often proposed as a strategy for obesity prevention, but many trials have found non-significant effects on body mass index (BMI) and found higher levels of school PE were associated with lower gains in adiposity in boys. Vucetić V, et.al. (2008) presented

the morphological characteristics of 54 Croatian national level track-and-field athletes. 21 anthropometric body measures were taken on a sample of 15 sprinters (S), 16 endurance sprinters (S4), 10 middle-distance runners (MD) and 13 long-distance runners (LD). Body fat percentage, body mass index and somatotype were also calculated. Canonical discriminative analysis showed significant difference between the athletes of various running events, in the measures of body volume and body fat, while no significant difference was found in the variables of longitudinal and transversal dimensions of the skeleton. Thus, the theoretical foundations based on previous researches proved that the body composition variables had direct influence on athletic ability of players and there were differences bound on body composition variables of the players depending on their playing positions and the game. Further it was found that there was further scope for research to make comparative analysis of body composition variables of players from different games.

It was therefore the purpose of this study was (a) to evaluate body composition parameters, in terms of body mass index and percent body fat among state level players of basketball, football and volleyball, and (b) to compare body composition of the players among the selected players for any differences.. For this purpose, the height and weight were used to determine the body mass index ad the skinfold data has been used to calculate body fat percentage. These data were used to ascertain the value of using skinfold measures to evaluate differences in body fat both within and across different players.

Methodology

To achieve the purpose of this study, the investigator selected randomly selected 30 basketball players, 30 football players and 30 volleyball players, who participated at state level competitions held at Hydrabad during the year 2012 and their mean age was 20.6 years with standard deviation of $\pm$ 1.4 years. Data were collected from the subjects, their height, weight, and skin fold measures of three sites. Based on the collected data, the subjects' body mass index and percent body fat were determined. The data on BMI and percent body fat were compared for the differences existed among the players using statistical tool ANOVA.

Results

The descriptive statistics on BMI and percent body fat, consisting, mean, standard deviation and range among basketball, football and volleyball players are presented in Table I.

Tab I: Descriptive Statistics, Mean (M), Standard Deviation (σ), and Range of Basketball, Football, and Volleyball Players.

Variable	Player	M	σ	Range
BMI	Basketball	21.79	2.61	17.51 – 28.08
	Football	19.16	2.47	15.37 – 24.21
	Volleyball	20.79	2.81	16.04 – 28.01
Percent Body Fat	Basketball	14.11	2.07	11.03 – 20.08
	Football	13.24	1.68	11.11 – 17.97
	Volleyball	13.68	1.87	11.35 – 18.42

The results presented in Table I proved that there were differences in body composition variables, BMI and percent body fat of the basketball, football and volleyball players. To find out the statistical significance of the differences among the selected groups, ANOVA was employed and the results presented in table II.

Table II: Differences in Body Composition Variables among Basketball, Football and Volleyball Players

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
BMI	Between	105.20	2	52.60	7.59	0.05
	Within	603.18	87	6.93		
Percent Body Fat	Between	11.42	2	5.71	1.62	NS
	Within	307.24	87	3.53		

The results presented in Table II proved that there was significant differences among BMI of the basketball, football and volleyball players and there was no significant differences among the groups on percent body fat. Since significant F values were obtained on BMI the results were further subjected to post hoc analysis using Scheffe's post hoc interval test and the results presented in Table III.

Table III: Multiple Comparisons of Paired Means on BMI among Basketball, Football and Volleyball Players

Basketball Players	Football Players	Volleyball Players	MD	C I
21.79	19.16		2.62*	1.69
21.79		20.79	1.00	1.69
	19.16	20.79	1.63	1.69

* Significant

The results presented in Table III proved that paired mean comparisons between basketball and football players was significant and other comparisons were not significant on BMI of the basketball, football and volleyball players.

Discussions

The results presented in this study gave way for consideration that whether the increase in body size has been the result of an increase in lean body mass or of an increase in body fat. It is logical to assume that an increase in body mass accompanied by an increase in fat-free mass would be particularly important in enhancing the performance of players. However, the different nature of playing situations can give different absorption of body fat was found in this study. Even though there was significant difference between basketball players and football players and football players were found to be less BMI, there was no significant difference among the players when their percent body fat was considered. This shows that the enhanced BMI levels of basketball players was absorbed in body while assessing percent body fat. The findings of this study were in agreement with the findings of Noel et.al. (2003)

Conclusions

The study proved that though there seem to be differences in BMI and basketball players tend to have more than football and volleyball players, from the standpoint of the athlete's overall health and medical prognosis there was no significant difference in percent body fat among the players. Hence, it was concluded that the difference noted in BMI was absorbed in body due to the vigorous playing situations of the players.

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Effect Of Various Intensities Of Plyometric Training On Selected Motor Fitness Components

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Abstract
The purpose of the present study was to find the effect of varied intensities of plyometric training on selected motor fitness components, such as, leg strength and flexibility. For this purpose, eighty male kabaddi players studying in various colleges around Virudhunagar town, Madurai District, Tamilnadu, with the age group of 18 – 25 years were selected. They were divided into four equal groups, each group consisted of twenty subjects, in which group - I (n = 20) underwent low intensity plyometric training (LPTG), group – II (n = 20) underwent medium intensity plyometric training (MPTG), group - III (n = 20) underwent high intensity plyometric training (HPTG) and group - IV remained as control. The training period was three days in a week for twelve weeks. The selected criterion variables such as leg strength and flexibility were assessed by using the dynamometer and sit and reach test. Prior and after the training periods, the subjects were tested for leg strength and flexibility. The Analysis of Covariance (ANCOVA) was applied as statistical tool, to find out which group has significantly improved the leg strength and flexibility. Whenever the adjusted post-test mean 'f' ration was significant, the Scheffé *S* was used as post hoc test. It was concluded after the training programmes, that three training groups, such as, low, medium and high intensities of plyometric training group has increased the leg strength, when compared with the control group and in flexibility, the high intensity plyometric training group was improved significantly and low and medium intensity training groups were not improved significantly. Moreover, there was no significant difference was occurred between the training groups on leg strength. In flexibility, the high intensity plyometric training group was significantly differ with low and medium intensity plyometric training groups and there was no significant difference was occurred between the low and medium intensity plyometric training groups.

Key words: plyometric training, leg strength, and flexibility

Introduction

Training is a systematic process of repetitive progressive exercise of work involving, learning and acclimatization.(***C.E. Kalf and D.D. Aruheim****, 1993*). Training means are various physical exercises and other objects methods and procedures, which are used for the improvement maintenance and recovery of performance capacity and performance readiness. (***Hardhayal Singh****, 1991*)

The basic training procedures will serve better when utilized with modifications suited to the individual or a group. The best training programme is that which increases the desired quality at a higher rate without causing unwanted effects. (**Boucher and Malina**, 1993)

Plyometric training enhances the tolerance of the muscle for increased stretch loads. This increased tolerance develops efficiency in the stretch shortening cycle of muscle action. During the stretching (eccentric lengthening phase) of muscle action a greater amount of elastic energy is stored in the muscle. This elastic energy is then reused in the following concentric action to make it stronger. This leads us to a fundamental principle of plyometric training: the rate, not the magnitude of the stretch, is that which determines the utilization of elastic energy and the transfer of chemical energy into mechanical work. (**www.Gambetta.com**)

Leg strength plays a vital role in the daily activities of human being. It is an essential factor for including in almost all games and sports. There is an old saying that an athlete will go only as long as his legs will carry him. Leg strength is very essential for sports persons, especially athletes.

Flexibility is possibly the most neglected and undervalued component of physical fitness. Lack of flexibility can be a cause of poor performance and inefficient technique can be a possible underlying cause for many of the strain and tear type muscle injuries found in sports. Poor flexibility can hinder speed and techniques. (**Rex Hazaldine**, 1985)

Materials And Methods

In this study, the effect of varied intensities of plyometric training on selected motor fitness components such as leg strength and flexibility have been examined. Eighty male kabaddi players studying in colleges from Virudhunagar town were selected and divided into four equal groups of twenty subjects each, each group consisted of twenty subjects, in which group -1 (n = 20) underwent low intensity plyometric training, group – II (n = 20) underwent medium intensity plyometric training, group - III (n = 20) underwent high intensity plyometric training and group - IV remained as control. For the purpose of collection of data on leg strength, the dynamometer was used and for flexibility sit and reach test was administered. Before applying the experiment all the subjects of the varied intensities of plyometric training groups and control group attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on leg strength and flexibility. After twelve weeks of training the post-test was conducted one day after the training period to find out any changes in the criterion variables.

Table – I

Analysis Of Covariance On Leg Strength Of Low Medium And High Intensity Plyometric Training And Control Groups

	Low Intensity Plyometric Training Group	Medium Intensity Plyometric Training Group	High Intensity Plyometric Training Group	Control Group	'F' Ratio
Leg Strength (in kilograms)					
Pre-test Mean ± S.D.	73.45 ± 4.93	72.55 ± 4.72	73.20 ± 4.34	74.85 ± 4.15	0.912
Post-test Mean ± S.D.	76.10 ± 5.00	76.80 ± 5.94	81.05 ± 4.61	74.50 ± 1.10	6.71*
Adj. Post-test Mean	76.157	77.768	81.335	73.28	35.328*
Flexibility (in inches)					
Pre-test Mean ± S.D.	9.59 ± 0.98	9.55 ± 1.68	9.49 ± 1.77	9.33 ± 1.20	0.127
Post-test Mean ± S.D.	9.80 ± 0.97	9.71 ± 1.69	9.88 ± 1.79	9.17 ± 1.63	0.866
Adj. Post-test Mean	9.70	9.646	9.877	9.331	4.285*

*Significant at .05 level of confidence. (The table value required for significant at .05 level with df 3 and 76 and 3 and 75 are 2.72 and 2.73 respectively).

Table – I shows that the pre-test values of leg strength for low intensity plyometric group, medium intensity plyometric training group, high intensity plyometric training group and control group were 73.45 ± 4.93, 72.55 ± 4.72, 73.20 ± 4.34 and 74.85 ± 4.15 respectively. The obtained 'F' ratio value of 0.912 for pre-test scores on leg strength was lesser than the required table value of 2.72 for significance with df 3 and 76 at .05 level of confidence. The post-test mean values all experimental groups and control group were 76.10 ± 5.00, 76.80 ± 5.94, 81.05 ± 4.61 and 74.05 ± 1.10 respectively. The obtained 'F' ratio value of 6.71 for post-test scores on leg strength was greater than the required table value. The adjusted post-test mean values of leg strength for all the training groups and control group were 76.157, 77.678, 81.335 and 73.28 respectively. The obtained 'F' ratio value of 35.328 for post-test scores of experimental groups and control group was greater than the required table value of 2.87 for significance with df 3 and 35 at .05 level of confidence.

Table – I also shows that the pre-test values of flexibility for low intensity plyometric group, medium intensity plyometric training group, high intensity plyometric training group and control group were 9.59 ± 0.98, 9.55 ± 1.68, 9.49 ± 1.77 and 9.33 ± 1.20 respectively. The obtained 'F' ratio value of 0.127 for pre-test scores on flexibility was lesser than the required table value of 2.72 for significance with df 3 and 76 at .05 level of confidence. The post-test mean values of flexibility for all the training groups and control group were 9.80 ± 0.97, 9.71 ± 1.69, 9.88 ± 1.79 and 9.17 ± 1.63 respectively. The obtained 'F' ratio value of 0.866 for post-test scores on flexibility was lesser than the required table value. The adjusted post-test mean values of flexibility for all the training groups and control group were 9.70, 9.646, 9.877 and 9.331 respectively. The obtained 'F' ratio value of 4.285 for post-test scores of experimental groups and control group was greater than the required table value of 2.87 for significance with df 3 and 35 at .05 level of confidence.

The result of this study showed that there was a significant difference among low intensity plyometric group, medium intensity plyometric training group, high intensity plyometric training group and control group on leg strength and flexibility. Further to determine which of the paired means has a significant increase, Scheffé *S* test was applied. The result of the follow-up test is presented in Table – II.

Table - II
Scheffĕ S Test For The Difference Between The Adjusted Post-Test Mean Of Leg Strength And Flexibility

Adjusted Post-test Mean on Leg Strength					
Low Intensity Plyometric Training Group	Medium Intensity Plyometric Training Group	High Intensity Plyometric Training Group	Control Group	Mean Difference	Confidence Interval at 0.05 level
76.157		81.335		5.178*	2.263551
76.157			73.28	2.877*	2.263551
	77.678	81.335		3.657*	2.263551
	77.678		73.28	4.398*	2.263551
		81.335	73.28	12.453*	2.263551
Adjusted Post-test Mean on Flexibility					
		9.877	9.331	0.546*	0.44468

* Significant at .05 level of Confidence.

Table – II shows that the adjusted post-test mean difference in leg strength between low intensity plyometric training and high intensity plyometric training group, low intensity plyometric training group and control group, medium intensity plyometric training group and high intensity plyometric training group, medium intensity plyometric training group and control group and high intensity plyometric training group and control group were 5.178, 2.877, 3.657, 4.398 and 12.453 respectively, which was significant at .05 level of confidence. The adjusted post-test mean difference between low intensity plyometric training group and medium intensity plyometric training group was 1.521, which was insignificant at .05 level of confidence.

Table – II also shows that the adjusted post-test mean difference in flexibility between high intensity plyometric training group and control group was 0.546, which was significant at 0.05 level of confidence. The adjusted post-test mean difference between low intensity plyometric training group and medium intensity plyometric training group, low intensity plyometric training and control group, medium intensity plyometric training group and high intensity interval training group and medium intensity plyometric training group and control group were 0.54, 0.177, 0.369, 0.231 and 0.315, which was insignificant at 0.05 level of confidence. It may be concluded from the results of the study that there was a significant improvement of leg strength after the low intensity plyometric group, medium intensity plyometric training group and high intensity plyometric training group. The results of the study also show that there was a significant improvement in flexibility only after the high intensity plyometric training group and there was no significant improvement in flexibility after low intensity and medium intensity plyometric training.

Discussion

All the training groups, such as, low, medium and high intensity plyometric training group, were improved their leg strength when compared with the control group. Where as, all the training groups were differ significantly each other, moreover, the high intensity plyometric training group have much higher improvement in leg strength when compared with the low and medium intensities of plyometric training group **Gopinath** (2000) also found that there was a significant improvement in leg strength after the plyometric training programme. **de Villarreal, Gonzalez-Badillo and Izquierdo** (2008) also found that there was a significant improvement in maximum strength after the different frequencies of plyometric training.The improvement in flexibility was significant for the high intensity plyometric training group when compared with the low and medium intensity plyometric training and control groups.

Conclusions

The improvement in flexibility was significant for the high intensity plyometric training group when compared with the low and medium intensity plyometric training and control groups. The training load in stretch-shortening exercise may not be sufficient to improve the flexibility for low and medium intensities of plyometric training group.All the training groups, such as, low, medium and high intensity plyometric training group, were improved their leg strength when compared with the control group. Where as, all the training groups were differ significantly each other, moreover, the high intensity plyometric training group have much higher improvement in leg strength when compared with the low and medium intensities of plyometric training group.

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A Study on the effect of Plyometric Training for development of Speed among High Jumpers of Hyderabad in India

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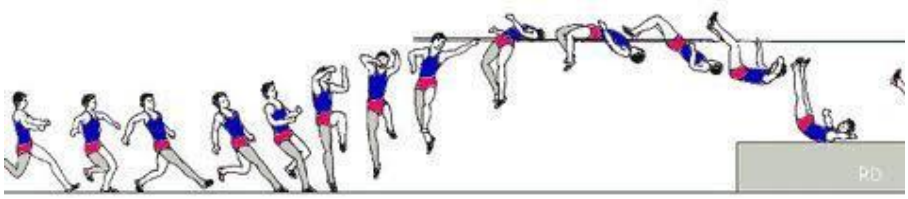
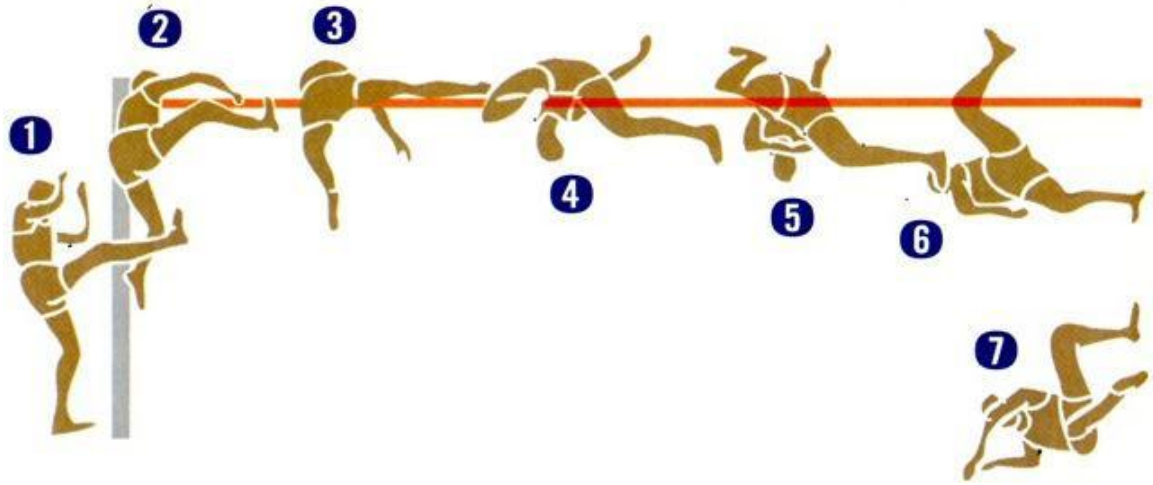
Abstract:
Background: Plyometrics, also known as "jump training" or "plyos", are exercises based around having muscles exert maximum force in as short a time as possible, with the goal of increasing both speed and power. The objective of the study is to determine the effect of plyometric exercises for development of speed among High Jumpers of Hyderabad in India. It is hypothesized there will be effect of Plyometric training for development of Speed among High Jumpers.
Materials and Methods: The purpose of the present study to find out the effect of plyometric training for the development of Speed in High Jump. The sample for the present study consists of 40 Male High Jumpers of Hyderabad out of which 20 are experimental group and 20 are controlled group. Plyometric exercises such as hopping, bounding, depth jumps, tuck jumps, box jumps etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in High Jump for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 50 Meters Run by the qualified technical officials of athletics to the experimental group and controlled group .
Results: This study shows that due to the plyometric exercises there is a improvement of High Jump experimental group in speed and High Jump controlled group is decreased in performance ability and speed due to the general training.
Discussion & Conclusion: High Jumping is all about explosive power. Explosive power is a combination of speed, muscular endurance and muscular strength, all of which can be developed through plyometric exercises. It is concluded that due to plyometric training there will be improvement in speed among High Jumpers.
Key words: plyometric exercises, speed, explosive power etc

Introduction: Plyometrics, also known as "jump training" or "plyos", are exercises based around having muscles exert maximum force in as short a time as possible, with the goal of increasing both speed and power. Speed and strength are integral components of fitness found in varying degrees in virtually all athletic movements. Simply put the combination of speed and strength is power. For many years, coaches and athletes have sought to improve power in order to enhance performance. Throughout this century and no doubt long before, jumping, bounding and hopping exercises have been used in various ways to enhance athletic performance. In recent years, this distinct method of training for power or explosiveness has been termed plyometrics. Whatever the origins of the word the term is used to describe the method of training that seeks to enhance the explosive reaction of the individual through powerful muscular contractions because of rapid eccentric contractions.Plyometrics are any exercises that help develop the stretch shortening cycle of movement. They start with the stretching of a muscle, an amortisation phase (the period of time from the beginning of the lengthening phase to the beginning of the take-off phase) and then a muscle contraction phase. The faster the stretching phase, the faster the contraction phase. It's akin to an elastic band being stretched and then released, rather than just thrown. The actions should be explosive in order to train the SSC, rather than heavy and slow. The exercises can involve some sort of jumping or landing for the lower body, or some sort of throwing for the upper body. The three main jumps are:

Drop (or depth) jump (DJ)
Here the athlete steps or jumps off a bench or step, lands on one or two feet and then jumps up as high as possible. This is a fast jump and one of the fundamental plyometric exercises.
Countermovement jump (CMJ)
The athlete starts in a vertical position, lowers their body by bending the knees and then jumps up, usually with an arm swing. This is a slower jump, although it does result in greater height than the squat jump .
Squat jump (SJ)
Here the athlete jumps up from a squatting position. The depth of the squat does not matter and is related to personal preference. This is a concentric-*on*ly jump and therefore not strictly speaking a plyometric action as there is no pre-stretching involved. However, some gains can be made from increasing maximal strength but these should be done in conjunction with the jump training.
The High jump is a track and field athletics event in which competitors must jump over a horizontal bar placed at measured heights without the aid of certain devices. In its modern most practiced format, auxiliary weights and mounds have been used for assistance; rules have changed over the years. Over the centuries since, competitors have introduced increasingly more effective techniques to arrive at the current form. Javier Sotomayor(Cuba) is the current men's record holder with a jump of 2.45 m (8 ft 0¼ in) set in 1993, the longest standing record in the history of the men's high jump. Stefka Kostadinova (Bulgaria) has held the women's world record at 2.09 m (6 ft 10¼ in) since 1987, also the longest-held record in the event.
The Fosbury Flop is a style used in the athletics event of high jump. It was popularized and perfected by American athlete Dick Fosbury, whose gold medal in the 1968 Summer Olympicsbrought it to the world's attention.



The **straddle technique** was the dominant style in the high jump before the development of the Fosbury Flop. It is a successor of the **western roll**.
Unlike the scissors or flop style of jump, where the jumper approaches the bar so as to take off from the outer foot, the straddle jumper approaches from the opposite side, so as to take off from the inner foot. In this respect the straddle resembles the western roll. However, in the western roll the jumper's side or back faces the bar; in the straddle the jumper crosses the bar face down, with legs straddling it. With this clearance position, the straddle has a mechanical advantage over the western roll, since it is possible to clear a bar that is higher relative to the jumper's center of gravity.



The objective of the study is to determine the effect of plyometric exercises for development of speed among High Jumpers of Hyderabad in India. It is hypothesized there will be effect of Plyometric training for development of Speed among High Jumpers.

Materials and Methods: The purpose of the present study to find out the effect of plyometric training for the development of Speed in High Jump. The sample for the present study consists of 40 Male High Jumpers of Hyderabad out of which 20 are experimental group and 20 are controlled group. Plyometric exercises such as hopping, bounding, depth jumps, tuck jumps, box jumps etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in High Jump for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 50 Meters Run by the qualified technical officials of athletics to the experimental group and controlled group

50 M Run:

Sprint or speed tests can be performed over varying distances, depending on the factors being tested and the relevance to the sport. The 50 Meter Sprint is part of the International Physical Fitness Test. Purpose: The aim of this test is to determine acceleration and speed.

Equipment required: measuring tape or marked track, stopwatch, cone markers, flat and clear surface of at least 70 meters.

Procedure: The test involves running a single maximum sprint over 50 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary standing position (hands cannot touch the ground), with one foot in front of the other. The front foot must be behind the starting line. Once the subject is ready and motionless, the starter gives the instructions "set" then "go.". The tester should provide hints for maximizing speed (such as keeping low, driving hard with the arms and legs) and the participant should be encouraged to not slow down before crossing the finish line.

Results**:** Two trials are allowed, and the best time is recorded to the nearest 2 decimal places. The timing starts from the first movement (if using a stopwatch) or when the timing system is triggered, and finishes when the chest crosses the finish line and/or the finishing timing gate is triggered.

Results: This study shows that due to the plyometric exercises there is a improvement of High Jump experimental group in speed and High Jump controlled group is decreased in performance ability and speed due to the general training.

Mean values and Independent Samples Test of 50 M run test between experimental and control groups

Variables	Group	Pre Test Mean ± SD	Post Test Mean ± SD	t	P - Value
50 M Run Test	Experimental	7.51 ± 0.294	7.23 ± 0.262	4.58	0.000
	Control	7.64 ± 0.376	7.73 ± 0.408		

***Significant at 0.05 level**

The Experimental Group of 50 M Run Men is 7.51 in Pre Test and Controlled Group mean is 7.64 in Pre Test there is adifference of 1.13 in Pre Test. The Experimental Group Mean is 7.23 in Post Test and Controlled Group mean is 7.73, the Experimental Group mean in Post Test in 50 M Run is decreased from 7.51 to 7.23 there is a improvement of 0.28 from Pre Test to Post and Control Group Mean is post test is 7.73 there is a increasement of 7.64 to 7.73 from Pre Test to Post, the performance is come down to 0.09 in the controlled group. The Standard deviation of Experimental group in Pre Test 0.294 and Post Test is 0.262 and controlled group is 0.376 to 0.408. T value is 4.58 and p-value is 0.000.

Discussion & Conclusion: High Jumping is all about explosive power. Explosive power is a combination of speed, muscular endurance and muscular strength, all of which can be developed through plyometric exercises. Due to Plyometric training the speed of experimental group is improved and due to the general training the controlled group speed is decreased. Plyometric exercises are specialized, high intensity training techniques used to develop athletic power (strength and speed). Plyometric training involves high-intensity, explosive muscular contractions that invoke the stretch reflex (stretching the muscle before it contracts so that it contracts with greater force). The most common plyometric exercises include hops, jumps and bounding movements. One popular plyometric exercise is jumping off a box and rebounding off the floor and onto another, higher box. These exercises typically increase speed and strength and build power.It is concluded that due to plyometric training there will be improvement in speed among High Jumpers.

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A Study on the Anthropometrical Variables among High and Low Level Performer Rowers of Andhra Pradesh in India

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Abstract
Background:
The purpose of the study was to observe the differences in anthropometric measurements (AM), somatotyping (ST) and body composition (BC) between high and low performers in Rowing.
Materials and Methods
The present study was conducted on (n=24) rowers of Andhra Pradesh between 20-24 years were divided into two groups. Group I was High performers (HP) and Group II was Low performers (LP). The measurements taken were Height (H), Weight (W), Sitting Height (SH), Arm span (AS), Humerus bicondylar diameter (HBD), wrist diameter (WD), Femur bicondylar diameter (FBD), ankle diameter (AK), Circumference – (upper arm (UAC), Forearm(FAC), Thigh (TC) & calf (CC)).The skin fold measurements were triceps(TSF), Supra-iliac (SISF), thigh (TSF) & calf (CSF). For somatotyping – endomorphy (EN), mesomorphy (M), ectomorphy (EC) and for body composition bone mass (BM), muscle mass (MM) and percentage of body fat (PBF) were calculated. The statistical tool used was mean, standard deviation and t test.
Results
The results showed that there was significant difference in W (t= 2.66), SH (t=3.40), AS (t=2.27) and TC (t= 2.26) between the HP and LP rowers at 0.05 level, but no significant difference was found in other AM. Further with regard to the ST the results showed no significant difference in EN, E & EC of HP & LP. However for BC the variable of BM (t=2.19) & MM (t=2.50) showed significant difference between the HP & LP, but there was no difference in the PBF of the groups.
Discussion and Conclusion
It was concluded that only four AM variables and two BC Variables showed significant difference between the HP &LP. There was insignificant difference in all other variables of the study which tends to show that there is not much difference in the HP & LP.
Key words: anthropometric measurements , somatotyping, body composition
Introduction
Physique and Body Composition play an important role in determining the performance of a sportsman in different games and sports. Certain body dimensions like stature, length of the legs and arm do not seem to change under normal circumstances (Tanner, 2004 & Sodhi, 2000). Hence it is pertinent that an athlete in a particular sport must possess such typical characteristics which are advantageous for him in his cherished sport. Many studies have forayed into this aspect and have come out with the conclusion that elite should invariably have the presence of basic structure. The above results were confirmed by Tanner (2004), Hirata (1998, 2007), De Gary et al.(2001), Carter(1997,2004) and Sodhi & Sidhu (2006) who all have agreed that highest performace can be achieved if there is a presence of desired body structure. The present study has been undertaken with the sole aim of studying anthropometric characteristics of high and low level performers in the sport of Rowing in the state of Andhra Pradesh.
Method
The present study was conducted on (n=24) rowers of Andhra Pradesh between 20-24 years. They were divided into two groups. Group I was High performers Group (HP) and Group II was Low performers Group (LP). The measurements taken were Height (H), Weight (W), Sitting Height (SH), Arm span (AS), Humerus bicondylar diameter (HBD), wrist diameter (WD), Femur bicondylar diameter (FBD), ankle diameter (AK), Circumference – (upper arm (UAC), Forearm(FAC), Thigh (TC) & calf (CC)).The skin fold measurements were triceps(TSF), Supra-iliac (SISF), thigh (TSF) & calf (CSF). For somatotyping – endomorphy (EN), mesomorphy (M), ectomorphy (EC) and for body composition bone mass (BM), muscle mass (MM) and percentage of body fat (PBF) were calculated. The following techniqes were used for securing the needed

Measures: Anthropometric measurements were taken by following the standard technique(Weiner and Lourie, 1969). Somatotyping was done by the Health and Carter (1967) technique. Parizkova's (1962) skinfold method was employed for the determination of percentage of body fat and bone mass were calculated by Matiegka's (1992) method. Keeping in view the purpose of the study , the data was grouped as follows: i) High Level Performers – those who represented state at National Championship. ii) Low Level Performers- those who represented their districts in the state championship but they were not selected to represent their state teams for the National Championship.The data was statistically treated by computing mean, Standard deviation and 't' values so as to see whether any significant difference existed between low level and high level male rowers.

Results

The results have some very interesting findings. They are presented in the following headings: a) Anthropometirc measurements b) Somatotyping c) Body composition

Anthropometric Measurements: The mean score and the 't' values of the anthropometric measurements of the low level and high level performer rowers are shown below:

Table I showing the 't' values of anthropometric measurements of the high and low level performers in rowing

Variable	't' value	Significant	Insignificant
Weight	2.66*	Significant	X
Sitting Height	3.40*	Significant	X
Arm span	2.27*	Significant	X
Thigh Circumfrence	2.26*	Significant	X
Height	2.10	X	Insignificant
Humerus Bicondylar daimeter	1.43	X	Insignificant
Wrist diameter	1.02	X	Insignificant
Femur Bicondylar daimeter	1.84	X	Insignificant
Ankle diameter	1.58	X	Insignificant
Upper arm circumfrence	0.84	X	Insignificant
Forearm circumfrence	0.35	X	Insignificant
Calf circumfrence	1.48	X	Insignificant
Triceps skinfold	0.07	X	Insignificant
Supra-ilaic skinfold	0.59	X	Insignificant
Thigh skinfold	0.48	X	Insignificant
Calf skinfold	1.03	X	Insignificant

*** Significant at 0.05 level of confidence**

Table I shows the 't' values of various Anthropometric measurements of the high and low performer rowers. The measurements showed that there was significant difference in Weight, Sitting height, Arm span and Thigh circumference between low and high performer rowers at 0.05 level of confidence with the 't' values being 2. 66, 3.40,2.27 and 2.26 respectively. However there was no significant difference found in height, humerus bicondylar diameter, wrist diameter, femur bicondylar diameter, ankle diameter, upper arm, forearn and calf circumference, triceps, supra-iliac , thigh and calf skinfolds.

Somatotyping

Table II showing the mean scores and 't' values of somatotyping of low level and high level performer rowers

S No	Measurements	Low Level	High Level	't' Value
		Mean±S.D.	Mean±S.D	
1	Endomorphy	2.75±0.94	3.04±1.17	0.63
2	Mesomorphy	2.96±0.78	2.83±0.97	0.37
3	Ectomorphy	3.91±0.83	3.41±1.27	1.09

Table II shows that there was no significant difference between the high and low level performer rowers as far as the somatyping was concerned as the 't' values of Endomorphy, Mesomorphy and Ectomorphy were 0.63, 0.37 and 1,09 respectively.

Table III showing the mean scores and 't' values of Body Composition of low level and high level performer rowers

S No	Measurements	Low Level	High Level	't' Value
		Mean±S.D.	Mean±S.D	
1	Bone Mass	10.66±1.80	11.57±0.85	2.19*
2	Muscle Mass	28.95±2.48	31.98±2.66	2.50*
3	Percentage body fat	14.70±3.08	15.45±4.64	0.44

*Significant at 0.05 level of confidence

Table III shows that there was significant difference between low level and high level performer rowers as far as the bone mass (t= 2.19) and muscle mass (t= 2.50) were concerned. However , there was no significant difference in the percentage body fat between the low and high level performer rowers.

Conclusion

It was concluded that only four Anthropometric Variables and two Body Composition Variables showed significant difference between the High Performer and Low Performer Rowers . There was insignificant difference in all other variables of the study which tends to show that there is not much difference in the High Performer and Low Performer rowers

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A Comparative Study of Endurance, Aggression and Dominance among Tribal Players and Non Tribal Players of Maharashtra in India

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Abstract
Background:
Personality and sport has proved a rather more fruitful area of study, and some important differences between the personalities of successful athletes in different sports have emerged. This is perhaps unsurprising when we consider the varying demands of different sports.Team players emerged as more anxious and extrovert than individual competitors. Aggression, in its broadest sense, is behavior, or a disposition, that is forceful, hostile or attacking. The sports also require a degree of aggression. Aggression can be a negative, although as long as it is controlled, it can also become a positive. The Objective and Aims of the study is To examine the endurance, aggression and dominance among Tribal players and Non tribal players. It was hypothesized that the Tribal players have significantly high endurance than the Non Tribal game players, Tribal players have significantly high aggression than the Non Tribal players and Tribal game players have significantly high dominance than the Non Tribal players.
Method & Materials:
The 200 Sample for the present study were selected from Maharashtra State , India. The effective sample consisted of 200 subjects, out of who 100 Tribal players and 100 Non Tribal players. The age of players was 18-24years Ratio were 1:1; Non- probability accidental and purposive sampling was used. Tripathi Personal Preference Schedule (TPPS): This test is developed and standardized by Ram Rishi Tripathi.
Results: The results of the study shows that the tribal players are having high endurance, more aggression and high dominance than the Non Tribal Players.
Discussion & Conclusion:
The results related to the hypothesis have been recorded. Mean of endurance of the Tribal player is 14.73 and Non tribal players Mean is 12.03 the difference between the two mean is highly significant ('t'= 8.73, df =198, P < 0.01).

Key Words: Endurance, Aggression etc.

Introduction:
Personality and sport has proved a rather more fruitful area of study, and some important differences between the personalities of successful athletes in different sports have emerged. This is perhaps unsurprising when we consider the varying demands of different sports. In the Schurz (1977) study, although relatively few differences emerged between athletes and non-athletes, considerable differences were found between team and individual players. Team players emerged as more anxious and extrovert than individual competitors. Another important distinction has emerged between the personalities of those taking part in high- and low-risk sports. Breivik (1996) administered the 16PF to 38 elite Norwegian climbers and found a distinctive profile characterized by very high levels of stability, extraversion and adventure seeking. In another study, Freixanet (1999) administrated the EPQ to a range of high-risk sports participants, including 72 mountaineers, and a control group of low-risk athletes. The mountaineers and other high-risk athletes were characterized by significantly higher levels of extraversion and low levels of neuroticism. Other high-risk sports have also attracted attention. Using the NEO-PI, Diehm & Armatas (2004) compared the personality of 44 golfers (low-risk) and 41 surfers (high-risk). Surfers emerged as significantly higher on the openness scale, meaning that they were more open to new experiences.
Aggression:
Extroverted people are often involved in sports which require a degree of aggression. Aggression can be a negative, although as long as it is controlled, it can also become a positive. There are two types of aggression:

Indirect aggression

This means taking the aggression out on an object

For example the ball in golf, tennis or football

Direct aggression

The aggression is in the direction of another player

Involves physical contact such as a rugby tackle or in wrestling or boxing

Aggression can sometimes be the same as being assertive and determined, in non-contact sports especially, this is usually a good thing. In contact sports, aggression, if uncontrolled, can lead to rule breaking and injuring the opponent.

Nicola Cogan, R.i.f Brown (Sep, 1999) Meta motivational dominance, states and injuries in risk and safe sports. Male risk sport participants (36 snowboarders) were compared with male safe sport participants (26 badminton players) using the Telic Dominance Scale [Murgatroyd, S., Rushton, C., Apter, M.J., and Ray, C. (1978) The development of the telic dominance scale. Journal of Personality Assessment, 42, 519–527] and the Negativistic Dominance Scale [McDermott, M.R., and Apter, M. J. (1988). The Negativism Dominance Scale. In M. J. Apter, J.H. Kerr, and M.P. Cowles (Eds.), Progress in reversal theory. Amsterdam: North-Holland] and the Telic/Paratelic State Instrument. Subjects also completed an Injury Behaviour Checklist giving information on the objective risk of the sports pursued. Risk sportsmen scored significantly lower than safe sportsmen on the TDS total score and on the Serious-Mindedness and Arousal Avoidance subscales, but there were no significant differences in Planning Orientation. Risk sportsmen scored significantly higher than safe on total NDS and on the Proactive subscale but not on the Reactive subscale. Analysis of T/PSI scores showed that both groups remained in their dominant state throughout the time course of the investigation. Risk sportsmen received more frequent and more serious injuries throughout the period of study and both TDS and NDS scores were significantly correlated with number of injuries. Discussion of high-risk sport as a way of meeting arousal, escape and control needs, and as expressing rebellion is related to values and stereotypes involved in risky sports and to implications in identifying possible addictions and preventing injuries.

Objective and Aim of the study:

To examine the Endurance, Aggression and Dominance among Tribal Players and Non Tribal Players s.

Hypotheses:

Tribal Players have significantly high endurance than the Non Tribal Players.

Tribal Players have significantly high aggression than the Non Tribal Players.

Tribal Players have significantly high dominance than the Non Tribal Players.

Sample:

For the present study 200 Sample were selected from Maharashtra, India. The effective sample consisted of 200 subjects, out of whom 100 Tribal Players and 100 Non Tribal Players of Maharashtra. The age range of subjects was 18-24 years Ratio were 1:1; Non- probability accidental and purposive sampling was used.

Tools : Tripathi Personal Preference Schedule (TPPS):

This test is developed and standardized by Ram Rishi Tripathi. The 225 items are rated on a two 'ka' or 'kha' alternatives. These two sets of co-efficient: one for internal consistency and the order for stability are 76 items and it highly valid.

Procedures of data collection

For data collection first permission has been taken from respective sources than the response has been selected for data collection. Personal data sheet (PDS) has been given to players for collect the preliminary information with respect to subject's related variables then standardized test administer to the subjects.

Before that rapport was established with subjects. And they have been told that their responses were kept confidential and the information is used for research purpose only.

Variable

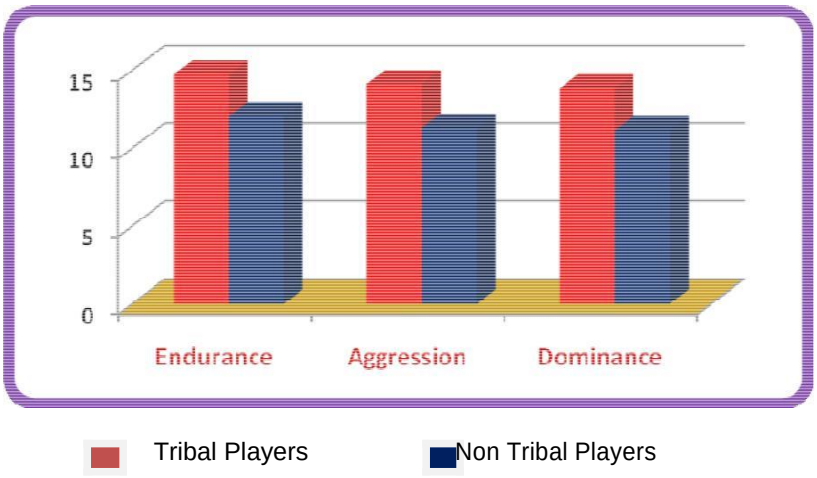
Independent Variable: a) Tribal Players b) Non Tribal Players

Dependent Variable: 1) Endurance 2) Aggression 3) Dominance

Statistical Analysis and Discussion:

Tribal Players and Non-Tribal Players Shows the mean S.D and t value of "Personality characteristics"

Group	Tribal Players		Non Tribal Players			
	Mean	SD	Mean	SD	DF	t
Endurance	14.73	2.29	12.03	2.03	198	8.73**
Aggression	14.11	3.13	11.29	2.41	198	7.14**
Dominance	13.83	4.40	11.13	3.69	198	4.70**



The results related to the hypothesis have been recorded. Mean of Endurance of the Tribal Player Mean is 14.73 and Non Tribal Players of Maharashtra. Mean is 12.03 the difference between the two mean is highly significant ('t'= 8.73, df =198, P < 0.01).

Aggression of the Tribal Player Mean is 14.11 and Non Tribal Players of Maharashtra. Mean is 11.29 the difference between the two mean is highly significant ('t'= 7.14, df =198, P < 0.01).

Dominance of the Tribal Player Mean is 13.83 and Non Tribal Players of Maharashtra. Mean is 11.13 the difference between the two mean is highly significant ('t'= 4.70, df =198, P < 0.01).

Results:

Tribal players have significantly high endurance than the Non Tribal Players of Maharashtra.
Tribal players have significantly high aggression than the Non Tribal Players of Maharashtra.
Tribal players have significantly high dominance than the Non Tribal Players of Maharashtra.

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Effect of Yoga on Self Concept and Mental Health of College Normal Health Students of Jalna District in India

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Abstract:
Background:
Mental health refers to the overall well-being of an individual. It is about the balance of the social, physical, spiritual and emotional aspects of life. Our Mental Health is characterized by our personal growth, sense of purpose, self-acceptance, and positive relationship with other people. It is also highly affected by environmental factors like our family life, social life, and our life at work. The self-concept is an internal model which comprises self-assessments of the Individual..The main objective of the study was to assess the effect of yoga training on self concept and mental health of the students. It is hypothesized that there will be difference between control group and experimental group on the dimension of self concept and mental health.
Materials and Methods:
The 40 normal health students were selected of Jalna district are selected for the study. 20 Experimental group of normal health students and 20 controlled group of normal health students. Age group was between 20 to 25 years. Both group were given pre test in two dimensions, i.e.,, Self concept and Mental Health . A yoga module consisting of yoga asanas, pranayama, meditation, 30 min of yoga training given daily for six weeks. For the both groups pre and post tests conducted. Self concept and Mental Health Tests were conducted by using the standard questionnaire.
Results:
There is a Positive effect of yoga on self concept and mental health of normal health students. Yogic exercise can promote self concept and mental h*ea*lth in experimental group.
Discussion and conclusion:
The Yoga exercises promotes the good health, physical fitness along with the self concept and mental health. It is concluded that Yoga promotes self concept and mental health. Hence Yoga exercises can be included in the college curriculum to promote the psychological development of the students in the college.
Key Words: Mental Health,Self Concept etc

Introduction:
Mental health refers to the overall well-being of an individual. It is about the balance of the social, physical, spiritual and emotional aspects of life. Our Mental Health is characterized by our personal growth, sense of purpose, self-acceptance, and positive relationship with other people. It is also highly affected by environmental factors like our family life, social life, and our life at work. Our general well-being is decreased by any negative experiences in any of these areas. Among the most common Mental Illnesses or Mental Disorders are Anxiety and Depression.Mental Health is a concept that refers to the psychological and emotional well-being of a person. Being mentally healthy generally means that you are able to use your emotional capabilities to function well in society and go through everyday life with little or no difficulty. Some factors that can affect your mental health are your family life, social life, and life at work. Having negative experiences in any of the said areas can deteriorate the condition of your mental health. Yoga is best known for its poses or Asanas. These reach deep into the yogi's body, massaging important internal organs. Asanas help cleanse and maintain the nervous and circulatory systems, which automatically result in a healthier body and mind. Breathing Exercises or Pranayama can also help in keeping a person healthy by supplying a fixed amount of oxygen to the muscles and internal organs. However, Yoga should not be treated as the sole remedy for mental illnesses. You should first seek assistance from a professional if you experience any of the symptoms mentioned above. Yoga can only help facilitate the recovery from some dangerous side effects of these mental illnesses. It should always be accompanied by proper medication and psychological counseling.

Effect of yoga on mental health: Comparative study between young and senior subjects in Japan. Conclusion Decrease in Salivary amylase activity may be due to reduction in sympathetic response. Reduction in State and Trait anxiety score signifies that yoga has both immediate as well as long-term effect on anxiety reduction. Thus yoga helps to improve the mental health in both the groups.Research studies have proved that the practice of Yoga brings profound change in an individual. Yoga is a way of life & teaches us how best to live for the well-being of the individual and development of a healthy society. Positive changes in the life style of the individual can be brought through practicing it. Yoga develops the physical, mental, intellectual, emotional and spiritual component which helps in building up a sound personality. Self-Concept is the sum total of a person's perception, feelings and beliefs about himself. It is the basis for all motivated behaviors. The present study is an attempt to assess the impact of Yoga on Self-Concept. The sample consisted of 50 Naturopathy and Yogic Science college students (Yoga practice group) and 50 Medical Colleges (MBBS) students both male and female. Personal information schedule and Mukta Rani Rastogi's Self-Concept Scale (1979) was used as measuring tools. Statistical 'T' test & ANOVA was employed for analyses of the data. Results revealed that Naturopathy and Yogic Sciences students have better Self-Concept compared to MBBS students. Dimension wise analysis also revealed that Yoga practitioners differ on all the ten sub-dimensions and overall Self-Concept compared to non-practitioners of Yoga.

Objective And Aim Of The Study: The main objective of the study was to assess the effect of yogic training on self concept and mental health.

Tools:

Self Concept Scale: Self concept scale develops and standardized by Dr. Raj Kumar Saraswat.

Mental Health Inventory: Self concept scale develops and standardized by Dr. C G Deshpande.

Variables:

Independent variable: Groups: a) Experimental b) Controlled

Dependant variable: Personality characteristics: 1. Self concept 2. Mental Health

Statistical Analysis And Discussion:

Table No. 01

Dimensions	Pre test of Experimental group		Post test of Experimental group			
	Mean	SD	Mean	SD	DF	t
Self Concept	98.58	15.49	134.69	18.03	18	6.81**
Mental Health	27.38	8.21	41.83	6.68	18	6.10**

Shows table no 01 pre-test experimental group of normal health students and post-test experimental group of normal health students the difference between the two mean is highly significant ('t'= 6.81, df =18, P < 0.01) dimension of self concept.Both difference between the two mean is highly significant ('t'= 6.10, df =18, P < 0.01) dimension of mental health.

Table No. 02

Dimensions	Pre test of Controlled group		Post test of Controlled group			
	Mean	SD	Mean	SD	DF	t
Self Concept	125.29	11.41	118.20	6.88	18	0.80
Mental Health	26.13	4.62	28.29	5.71	18	1.31

Shows table no 02 pre-test Controlled group of normal health students and post-test Controlled group of normal health students the Both groups difference between the two mean is No difference between the two mean is ('t'= 0.80, df =18, P < NS) dimension of self concept.Both difference between the two mean is No difference between the two mean is ('t'= 1.31, df =18, P < NS) dimension of mental health.

Results:

Positive effect of yogic exercise was shown on self concept and mental health of normal health students of Jalna District in India. Yogic exercise can improve the, self concept and mental health in experimental group.

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A Study on Effect of Yoga Exercises for development of Physical Fitness among College Girls Students of Aurangabad in India

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Abstract:
Background: Yoga is one of the six orthodox systems of Indian philosophy. When mind, intellect, & self are under control, freed from restless desire, so that they rest in the spirit within, a man becomes a Yukta - one in communion. Yoga is a systematic discipline, originated in India, for self realization.. One may select one Asana, or one may select many Asanas. In the beginning while learning, it may be uncomfortable as any new thing is always uncomfortable in the beginning but after some practice the same becomes comfortable.The objective of the study is to improve the Physical fitness through Yoga among college girls tudents. It was hypothesized that yogic exercise would be more effective in improving Physical fitness than all other interventions.
Material and Methods: The purpose of the present study to find out the effect of Yoga exercises for the development of Physical fitness among College Girl Students of Aurangabad. The sample for the present study consists of 40 college girls of Aurangabad out of which 20 are experimental group and 20 are controlled group. Yoga exercises were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training of Physical exercises for eight weeks. To assess Physical fitness the 50 Meters Run, Shuttle Run and 600 Yard Run is conducted in Pre Test and Post Test on both groups
Results: The results related to the hypothesis have been recorded. The difference between the between pre and post test in experimental Group and control group is highly significant.
Discussion and conclusion: It has been observed from the Analysis of data that fitness variables like speed, agility and endurance were improved within the experimental group.

Key Word: Yoga, Physical Exercises etc.

Introduction :
Yoga is one of the six orthodox systems of Indian philosophy. When mind, intellect, & self are under control, freed from restless desire, so that they rest in the spirit within, a man becomes a Yukta - one in communion Yoga is a systematic discipline, originated in India, for self realization. However, now a day's scientific researchers find its utility for all round development of personality along with innumerable spiritual as well as therapeutically applications. As per Indian tradition Yoga specially An Asana is defined as a body position which is steady & comfortable. Actually this is the only explanation given of the Asana. One may select one Asana, or one may select many Asana. In the beginning while learning, it may be uncomfortable as any new thing is always uncomfortable in the beginning but after some practice the same becomes comfortable. Patanjali enumerates the means as the eight limbs or stages of yoga for the quest of the soul. They are: 1) Yama 2) Niyama 3) Asana 4) Pranayama 5) Pratyahara 6) Dharana 7) Dhyana 8) Samadhi.
Yoga is known as the "gentle" form of exercise. When practiced correctly & regularly, it strengthens the muscles, keeps the spine flexible, loosens stiff joints, calms mind, bring balance & harmony to the whole being.
Objectives: The present study was conducted with the following objectives:
1) To detect health-related physical fitness problems through screening based on fitness reports.
2) To assess the status of health related fitness associated with physio-biochemical profiles of among college girls students of Aurangabad City.
3) To prepare 'Modules of Yogic Exercises' for improving health related fitness so as to improve physical fitness;
4) To evaluate efficacy of the 'Modules' on selected health-related fitness factors through a controlled experiment;.

Sample:

Forty college girls students of Aurangabad (n=40), age 18+ years, residing at Aurangabad City were pooled for this controlled experiment. They were randomly assigned in to two groups, viz., Yoga group (Gr.I), and control group (Gr.II) And special care was taken in such a way so that sufficient number of sample represents the population. All the subjects were from Aurangabad City.

Dependent Variables

Physical fitness is important factor essential in every field. Research Works on these variables revealed that yoga contributes to improve physical fitness. This is the basis on which following variables have been incorporated in this present study and tests conducted for this study is are follows:

* Bent knee sit ups for Muscular Endurance * Shuttle run test for Agility.
* Body mass index for freedom from obesity. * Sit and reach test for flexibility.
* 50 Yard Dash for Speed. * Vertical Jump for Power

Independent variables:

A set of selected asana formed the independent variables in the present study. They are listed below: Pashchimottanasana, Sarvangasana, Dhanurasana, Parvatasana, Vrukshasana, Halasana, Bhujangasana, Madukasana, and Shavasana.

Procedure of the study:

For the present study forty girls subjects (N=40) were chosen. The preliminary information about the subjects like names & ages were collected one week earlier than the actual day of administrating the test. The age of the subjects were confirmed also from their record register. The subjects randomly selected and divided into two groups consisting of 20 subjects each in the experimental group and the control group. A set of nine asana were practiced for a total of 6 weeks period. Control Group did not receive this training. However, all the 40 subjects underwent the pre-test and pos-test before and after the training programme. The pre-test data collection was completed within one day from 9.00 am to 4.00 pm. Similarly, the post-test data were collected

Comparison of Control group means of Pre and Post Test of Physical Fitness Variables

The mean performance scores of the subjects in the physical fitness variables of control group have been presented in Table 1.

TABLE 1

Comparison Of Control Group Mean Gains Of Physical Fitness Variables At Pre And Post Tests

VARIABLES	PRE TEST MEAN + SD	POST TEST MEAN + SD	MEAN DIFFERNCE	SEm	t	Significance
50 Yard Dash	**7.95 + 0.18**	**7.88 + 0.14**	**0.07**	**0.06**	**1.2**	**p>0.05**
Sit & Reach	**22.9 + 1.18**	**23.6 + 0.91**	**0.7**	**0.38**	**1.8**	**p>0.05**
Shuttle Run	**11.1 + 0.29**	**10.9 + 0.32**	**0.2**	**0.11**	**1.82**	**p>0.05**
Vertical Jump	**46.9 + 7.27**	**46.4 + 7.02**	**0.5**	**2.61**	**0.19**	**p>0.05**
Bent Knee Sit Ups	**23.6 + 1.97**	**24.3 + 1.31**	**0.7**	**0.59**	**1.3**	**p>0.05**
Body Mass Index	**19.7 + 2.19**	**20.4 + 1.93**	**0.7**	**0.75**	**0.9**	**p>0.05**

Comparison on Control group mean gains on 50 Yards Dash of Pre and Post Tests

In the case of 50 Yards Dash test the mean performance of control group on the pre and post tests, were 7.95 (SD = 0.18) and 7.88 (SD = 0.14) respectively. The mean difference 0.07 with SE_M = 0.06**.** The't' value is 1.20, which is not significant, which does not show difference between pre and post test of 50 Yards Dash..

Comparison of Experimental group means in Fitness Variables on Pre and Post Tests:

The mean performance scores of the subjects in the physical fitness variables of Experimental group have been presented in Table 2.

TABLE 2 :**Comparison Of Experimental Group Mean Gains On Pre And Post Test Physical Fitness Variables**

VARIABLES	PRE TEST MEAN + SD	POST TEST MEAN + SD	MEAN DIFFERNCE	SEm	t	Significance
50 Yard Dash	7.97 + 0.17	7.90 + 0.12	0.07	0.05	1.40	p>0.05
Sit & Reach	23.4 + 1.4	25.0 + 1.6	0.55	2.91	2.91	p>0.05
Shuttle Run	11.0 + 0.25	10.8 + 0.21	0.2	0.08	2.50	p>0.05
Vertical Jump	47.1 + 5.47	48.4 + 5.39	1.3	1.98	0.66	p>0.05
Bent Knee Sit Ups	24.1 + 1.78	25.9 + 1.69	1.8	0.63	2.86	p>0.05
Body Mass Index	19.6 + 1.74	20.5 + 1.69	0.9	0.63	1.4	p>0.05

Comparison of Experimental group mean gains in 50 Yards Dash on Pre and Post Tests

In the case of 50 Yards Dash test the mean performance of experimental group in the pre and post tests, were 7.97 (SD = 0.17) and 7.90 (SD = 0.12) respectively. The mean gain for experimental group was 0.07 (SE_M = 0.05). The result of't'-test of the experimental group show significant improvement in 50 Yards Dash test (t = 1.4, p > 0.05).

Mean gains on pre-test of Control Vs Experimental Groups of Fitness Variables: Mean gains on pre-test of Control Vs Experimental Groups of physical fitness variables have been presented in Table 3..

TABLE 3:Group Mean Gains In Pre Test Of Physical Fitness Variables Of Control And Experimental Groups

VARIABLES	GROUPS	MEAN GAIN	DIFFERNCE	SEm	t	Significance
50 Yard Dash	CONTROL V/S EXPRIMENTAL	7.95 v/s 7.97	0.02	0.06	0.33	p>0.05
Sit & Reach	CONTROL V/S EXPRIMENTAL	22.9 v/s 23.4	0.50	0.47	1.06	p>0.05
Shuttle Run	CONTROL V/S EXPRIMENTAL	11.1 v/s 11.0	0.10	0.09	1.02	p>0.05
Vertical Jump	CONTROL V/S EXPRIMENTAL	46.9 v/s 47.1	0.20	2.32	0.09	p>0.05
Bent Knee Sit Ups	CONTROL V/S EXPRIMENTAL	23.6 v/s 23.8	0.20	0.7	0.28	p>0.05
Body Mass Index	CONTROL V/S EXPRIMENTAL	19.7 v/s 19.6	0.10	0.72	0.14	p>0.05

Mean gains of pre-test in 50 Yards Dash of Control and Experimental Groups:
In the case of 50 yards Dash test the mean performance of control and experimental groups in the pre–test were 7.95 and 7.97 respectively. The mean difference for the groups were 0.2 (SE_M = 0.06). The result of't'-test of the groups does not show significant improvement in 50 Yards Dash (t = 0.33, p > 0.05).

Mean gains on post-test of Control Vs Experimental Groups of Fitness Variables: Mean gains on post-test of Control Vs Experimental Groups of physical fitness variables have been presented in

Table 4.

Mean Gains In Post Test Of Selected Physical Fitness Variables O Fcontrol And Experimental Groups

Variables	Groups	Mean Gain	Differnce	Sem	T	Significance
50 Yard Dash	Control **V/S** Exprimental	7.90 V/S 7.88	0.02	0.05	0.40	P>0.05
Sit & Reach	Control **V/S** Exprimental	23.6 V/S 25.0	1.40	0.46	3.04	P>0.05
Shuttle Run	Control **V/S** Exprimental	10.9 V/S 10.8	0.10	0.09	1.11	P>0.05
Vertical Jump	Control **V/S** Exprimental	46.4 V/S 48.4	2.00	2.26	0.88	P>0.05
Bent Knee Sit Ups	Control **V/S** Exprimental	24.3 V/S 26.6	2.30	0.43	5.35	P>0.05
Body Mass Index	Control **V/S** Exprimental	20.6 V/S 20.5	0.10	0.66	0.15	P>0.05

Group mean gains of post-test in 50 Yards Dash of Control and Experimental Groups
In the case of 50 Yards Dash test the mean performance of control and experimental groups in the post- tests were 7.9 and 7.88 respectively. The mean difference for the groups were 0.02 with SE_M = 0.05. The't' value is 0.4 which is not significant at 0.05, which does not show significant improvement in 50 Yards dash test,

Conclusions:

Within certain limitations the present experiment warrants the following conclusions:

The Yogic exercises training imparted in this study for a period of eight weeks was useful in improving some of the fitness variables as included for experiment.

Associated fitness variables of college girl's students of Aurangabad were also improved significantly as a result of selected Yogic training.

As it has been observed that the Analysis of data that fitness variables like flexibility, agility, and abdominal strength were improved within the experimental group.

In case of between the groups the fitness variables like flexibility and abdominal strength have shown significant improvement.

Contribution and Recommendations:

The following recommendations were made in the light of this investigation for further research:

There is a need to study the effect of other Yogic exercises for the devlopment of physical fitness.

The subjects were neither players nor they had learnt this yoga under specific training earlier; therefore, further study is essential on trained girls along with the well planned programme of specific yogic training exercises with an increase in the training period.

The subjects selected for this study were college girl's students of Aurangabad hence a similar study could be conducted on boys.

The present study recommends the use of these findings to college / university department to keep their staff physically as well as mentally fit to perform their duty in proper manner.

More innovative yogic training programmers may be developed for various other governments' departments.

Similar studies in the line of the present study may be undertaken on larger samples of different groups in future.

Professionals of physical education should consider the need for improvisation of different yogic training programmes.

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A Study on the effect of Yoga Training for development of endurance among middle and long distance runners of Osmania University in India

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Abstract:
Background: Yoga is a very old Indian practice that goes back to over 5000 years. The term 'yoga' comes from a Sanskrit word 'yuj', which actually means to bring oneself to a disciplined way of life.Regular practice of the yoga positions can result in plenty of benefits, including stimulation of the internal organs and improving blood circulation. Yoga stretches provide benefits to the mind and body and bring about balanced energy flow.The objective of the study is to determine the effect of Yoga training for development of Aerobic Endurance among middle and long distance runners of Osmania University in India. It is hypothesized there will be effect of Yoga training for development of endurance.
Materials and Methods: The purpose of the present study to find out the effect of yoga training for the development of endurance among middle and long distance runners of Osmania University. The sample for the present study consists of 40 Male middle and long distance runners out of which 20 are experimental group and 20 are controlled group. Yoga exercises were given to experimental group daily before the practice and middle and long distance training is given and controlled group were given the only the training of middle and long distance for six weeks. To assess the endurance Pre Test and Post Test were conducted in 12Min Run Cooper Test to both groups .
Results: This study shows that due to the yoga training there is a improvement of endurance among experimental group controlled group is decreased in endurance.
Discussion & Conclusion: Yoga exercises are beneficial for improvement of endurance and also have lot of health benefits. It is concluded that due to the Yoga training there is a improvement of endurance among middle and long distance athletes.
Key words: yoga, endurance etc.

Introduction:

Endurance is a conditional ability.It is primarily determined by energy liberation process.Endurance is directly or indirectly of high importance in all sports. Endurance is the ability to do sports movements, with the desired quality and speed, under conditions of fatigue. Endurance is a very important ability in sports. In sports endurance ensures optimum speed of motor actions. Good endurance also ensures high quality or skill of movement execution which finds expression in accuracy, precision, rhythm, consistency etc. Endurance training results in the improvement of functioning of various organs and systems of the human body. This in turn improves the ability to recover quickly from training and competition load. The importance of endurance for recovery assumes much more relevance during completion i.e. in between heats, rounds, matches on successive days. Endurance performances are of different nature indifferent sports. Endurance activities have been found to be of high value for maintenance of good organic health, for increasing the general resistance against infection and for cure and treatment of various diseases and metabolic disorder. Yoga is a very old Indian practice that goes back to over 5000 years. The term 'yoga' comes from a Sanskrit word 'yuj', which actually means to bring oneself to a disciplined way of life.Regular practice of the yoga positions can result in plenty of benefits, including stimulation of the internal organs and improving blood circulation. Yoga stretches provide benefits to the mind and body and bring about balanced energy flow

Methodology:

Aim: To find out the effects of Yoga Training for development of Endurance among middle and long distance runners of Osmania University in India

Sample:The sample for present study is 40 College Male middle distance and long distance runners from various Colleges of Osmania Univesity. The Experimental Group Sample is 20 College Male runners and Controlled Group Sample is 20 College Male runners.

Tools: 12 Min Cooper Test is used for collection of Data

Procedure of data Collection:

The 12 Min Cooper Test were used for Pre Test for Experimental Group and Controlled Group and results was recorded. The 6 weeks training were given to Experimental Group which consists of Yoga training on alternate days.The Yoga training includes all types of yoga exercisesmWhich is given training to experimental group. The controlled group was given the general training. After Six weeks Training the Post Test were conducted experimental group and controlled group.The athletes generally hail from different socio-economic status, different dietary habits, mode of living etc. certain factors like daily routine, life style and food habits which would have an effect on the performance of both groups could not be controlled.

RESULTS AND DISCUSSION

The Table No.1 showing the Mean,S.D.Values obtained by Experimental Group and Controlled Group in Pre – Test. There is difference 0f 98 Meters among the performance of both groups in pre test.

Pre Test(Mtrs) Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Experimental Group	20	3441.75	219.71	49.13	1.69453	38.00	0.10
Controlled Group	20	3343.50	137.71	30.79			

The Table No.2 is showing the Mean,S.D.values obtained by Experimental Group and Controlled Group in Post Test. Due to yoga training given to Experimental group there is the difference of 420 Meters between Experimental Group and Controlled Group in Post Test as compared to 98 Meters in Pre Test.

Post Test(Mtrs) Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Experimental Group	20	3725.50	238.89	53.42	6.440721	38.00	0.00
Controlled Group	20	3305.00	167.87	37.54			

Conclusions:1.It is concluded that there will be effect of Yoga Training on endurance performance of middle and long distance runners of Osmania University.

2. The Coaches must include Yoga Programmes for development of endurance.

Recommendations:1.It is recommended that similar studies can be conducted on other sports and games.

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A Study on the effect of Hill Running for development of Speed among Sprinters in Gulbarga District of India

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Abstract:
Background:
Hill running has a strengthening effect as well as boosting your athlete's power to increase the speed. In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. The objective of the study is to determine the effect of hill running for development of speed among sprinters of Gulbarga in India. It is hypothesized there will be effect of Hill running for development of Speed among sprinters.
Materials and Methods: The purpose of the present study to find out the effect of Hill running for the development of Speed in sprinters. The sample for the present study consists of 30 Male Sprinters of Gulbarga District out of which 15 are experimental group and 15 are controlled group. Hill running such as short hills, medium hills, long hills training were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in sprints for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 30 Meters Run to the experimental group and controlled group .
Results: This study shows that due to the hill running there is a improvement of sprinters experimental group in speed and sprinters controlled group is decreased in performance due to the general training.
Discussion & Conclusion: Hill work results in the calf muscles learning to contract more quickly and thereby generating work at a higher rate, they become more powerful. The calf muscle achieves this by recruiting more muscle fibres, around two or three times as many when compared to running on the flat to gain the speed.

Key words: Hill running, speed etc.

Introduction:
Hill running has a strengthening effect as well as boosting your athlete's power to increase the speed. In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. Running inclines, either on a hill outdoors or on a treadmill, is a form of resistance training that builds up the muscles in your calves, quads, hamstrings, and glutes. Hill running strengthens those areas more than running on flat ground. You'll also strengthen your hip flexors and Achilles tendons.Runners today increasingly understand the importance of combining strength work with regular running. It strengthens tendons and ligaments, reduces the risk of injury and improves overall running form. The problem is that most runners tend to do the majority of their strength-specific work in the gym, through squats, leg extensions or arm and shoulder presses. While these exercises do increase strength and muscular power, they do it in isolation of your running, focusing on individual joints and small sets of muscles.Hill sessions, in contrast, force the muscles in your hips, legs, ankles and feet to contract in a coordinated fashion while supporting your full body weight, just as they have to during normal running. In addition, on uphill sections your muscles contract more powerfully than usual because they are forced to overcome gravity to move you up the hill. The result is more power, which in turn leads to longer, faster running strides.
It is well known that adding resistance to your sprints can bring about great gains in speed, especially during the initial or "drive" phase of your sprint. Overcoming resistance will help you overcome inertia when you are starting from a stationary position. In other words, hill sprints help you go from a static starting position to full speed faster. In addition to this, the slightly shortened stride length during hill sprints promotes longer ground contact, which is also key to the "drive" phase - when you are looking to "rip back the track." Dragging tires and sleds, towing parachutes and pushing against partners are

other common forms of this type of training. The great thing about hills is that you do not need additional equipment or a training partner to get an incredible resistance sprinting workout.

Hill sprints teach proper knee lift:Another commonly known fact is that sprinting with "knees up" can make you faster. This high knee lift is important to loading your leg and allowing you to step down forcefully to push your body forward. Running uphill forces you to lift your knees high - similar to how you would run over mini hurdles or through shallow water or deep snow. High knees will make you bound like a gazelle during the middle or "float" phase of your sprint.

Hill sprints teach proper "toe up" position:Along with teaching proper knee lift, hill sprints force dorsiflexion of the foot. You must pull your toes up towards your shins when you are going uphill. This position works the anterior tibialis muscle on the outside front of your lower leg. This muscle is essential for running fast (and vertical velocity). The farther up you can flex your foot, the more power you can exert into the ground on foot contact. Think of your "toe up" position as a "loaded" position - ready to unload power into the ground. As an added bonus, strong anterior tibialis can help you to avoid shin splints problems.

Hill sprints strengthen your ankles: Besides helping you avoid the most common injury in athletics, the ankle sprain, strong ankles lead to improvements in stride length. The stronger your ankles become, the harder you can push off the ground to move your body forward. The harder the push, the longer the time you stay in the air between foot contacts resulting in a longer stride length. **Hill sprints promote hamstring safety:**Finally, sprinting hills can give you a full intensity workout without ever getting up to your full 100% speed. Since you never reach top speed, your hamstrings are at little risk. This can be important in early season training (especially in cold weather). Now, this does not mean that you should ignore your hamstrings. When your conditioning and strength improve and the weather is warm, be sure to include flat (and even downhill) sprints to work this important area of your legs. Stronger hamstrings - especially if they are more balanced with your quadriceps - are another effective way to run faster.

Sprints are short running events in athletics and track and field. Races over short distances are among the oldest running competitions. The first 13 editions of the Ancient Olympic Gamesfeatured only one event—the stadion race, which was a race from one end of the stadium to the other. There are three sprinting events which are currently held at the Summer Olympics and outdoor World Championships: the 100 metres, 200 metres, and 400 metres.

Materials and Methods:

The purpose of the present study to find out the effect of Hill running for the development of Speed in sprinters. The sample for the present study consists of 30 Male Sprinters of Gulbarga District out of which 15 are experimental group and 15 are controlled group. Hill running such as short hills, medium hills, long hills training were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training in sprints for eight weeks. To assess the Speed Pre Test and Post Test were conducted in 30 Meters Run to the experimental group and controlled group .

Sprinters in action

Hill running practice

30 Meters sprint Test:

Objective:To monitor the development of the athlete's maximum sprint speed.

To undertake this test you will require:

- Flat non-slip surface
- Cones
- Stopwatch
- Assistant

This test requires the athlete to sprint as fast as possible over 30 metres

- The athlete warms up for 10 minutes
- The assistant marks out a 30 metre straight section with cones
- The athlete starts in their own time and sprints as fast as possible over the 30 metres
- The assistant starts the stopwatch on the athlete's 1st foot strike after starting and stopping the stopwatch as the athlete's torso crosses the finishing line
- The test is conducted 3 times
- The assistant uses the fastest recorded time to assess the athlete's performance.

Results: This study shows that due to the hill running there is a improvement of sprinters experimental group in speed and sprinters controlled group is decreased in performance due to the general training

Mean values and **Independent Samples Test of 30 M run test between experimental and control groups**

Variables	Group	Pre Test Mean	Post Test Mean ± SD	t	P - Value
30 M Run Test	Experimental	4.51	4.23	2.58	0.000
	Control	4.64	4.73		

*Significant at 0.05 level

The Experimental Group of 30 M Run Men is 4.51 in Pre Test and Controlled Group mean is 4.64 in Pre Test there is adifference of 1.13 in Pre Test. The Experimental Group Mean is 4.23 in Post Test and Controlled Group mean is 4.73, the Experimental Group mean in Post Test in 30 M Run is decreased from 4.51 to 4.23 there is a improvement of 0.28 from Pre Test to Post and Control Group Mean is post test is 4.73 there is a increasement of 4.64 to 4.73 from Pre Test to Post, the performance is come down to 0.09 in the controlled group. Due to the Hill running the experimental group has decreased the performance in the 30 M Sprints.

Discussion & Conclusion: Hill work results in the calf muscles learning to contract more quickly and thereby generating work at a higher rate, they become more powerful. The calf muscle achieves this by recruiting more muscle fibres, around two or three times as many when compared to running on the flat to gain the speed. It is concluded that due to the Hill Running the sprinters experimental group has improved a lot compare to the sprinters controlled group.

Recommendations:

The Hill running up and down are recommended for the sprinters for practice to enhance the performance. Similar studies can be conducted on other events in athletics.

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Physical Fitness: An Ignored Manthra In Rural Engineering Students

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Abstract

Education is as old as the human race. Its importance has been realized since times immemorial and continues right upon this day. Education is a process of human enlightenment and empowerment for the achievement of a better and higher quality of life. According to 'Vedas and Upanishads' a famous saying is

"Asatoma Sadgamaya
Tamasoma Jyothirgamaya
Mruthyorma Amruthangamaya"

Thus, education may be defined as planned interaction within an institution, devised specially for the purpose based upon the belief in the plasticity of human nature and resulting in the desired modification of behaviour of the individuals involved. Education involves curricular, co-curricular and extra-curricular activities but, unfortunately the balance is missing because of over focus on curricular activities only and co curricular and extra-curricular actives are ignored in the present context. This is observed more phenomenal in professional courses when compared to the non professional courses.The purpose of this study was to study reasons behind the ignorance of physical fitness in rural engineering students. Subjects were the professional students of rural engineering colleges in karimnagar district of Andhrapradesh.

Key words: Engineering, Body Mass Index, Physical Fitness,

Healthy active living benefits both individuals and society in many ways, for example, by increasing productivity, improving morale, decreasing absenteeism, and reducing health care costs. Other benefits include improved psychological well being, physical capacity; self esteem and the ability to cope with stress. Although behaviors of students are considered a temporary part of college life, however, unhealthy habits picked up at this level generally persist in adult life. University and college arenas, therefore, represent an important opportunity for health and nutritional education.

College life is also a period during which individuals are for the most part exposed to stress and lack of time, posing a barrier to adoption of healthy practices. Physical activity among adolescents is consistently related to higher levels of self esteem and self-concept and lower levels of anxiety and stress. Physical activity and fitness need to be an integral part in student level so that it will enable students focus more on their studies and career. But, unfortunately this physical fitness manthra is ignored in rural professional engineering students.

The study sample included 120 engineering students. A structured questionnaire was used to collect data. In addition to demographic details, attitude and practice of physical fitness, factors influencing to engage in physical fitness are included in the study. Body mass index (BMI) was calculated using the formula weight in kilograms/height in square meters. Statistical Package for Social Sciences (SPSS) version 16 was used for data analysis and results are expressed as percentages and proportions.

In our study population, 60 (50%) students were aged between 17 19 years and 60 (50%) were between 20 to 22 years range. There were equal numbers of boys and girls (60 each). Majority of students 77 (64.1%) had normal BMI, 31(25.8%) are underweight, 08(6.6%) were overweight, while 4 (3.33%) were obese. A good proportion 94 (78.33%) reported current practice of physical activity as shown in Table 1.

Table-1
Body Mass Index (Bmi) Categorisation Based On Physical Activity (*N=120)*

Variables	<18.5 N (%)	18.5-24.9 N (%)	25.0-29.9 N (%)	≥30 N (%)
Age Group				
17-19	21(17.5)	35(29.16)	03(2.5)	01(0.83)
20-22	10(8.33)	42(35)	05(4.16)	03(2.5)
Gender				
Male	07(11.66)	44(73.33)	06(10)	03(05)
Female	24(40)	33(55)	02(3.33)	01(1.66)
Practice Of Physical Activity				
Yes	20(16.66)	62(51.66)	05(4.16)	03(2.5)
No	11(9.166)	15(12.5)	02(1.66)	01(0.83)

Source: Primary Data

Table-1 shows the cross tabulation between age, gender and practice of physical activity versus BMI categories such as underweight, normal weight, over weight and obese. The significant variable of this study is gender. Female students seem to be away from the physical activity may be because of various constraints or access to facilities and support from their environment.

Table-1 reveals that in the age group of 17-19 years17.5 per cent of engineering students are underweight whose Body Mass Index (BMI) is less than 18.5, 29.16 per cent are average weighed with a BMI ranges between 18.5 to 24.9, 2.5 per cent are with overweight of BMI ranging between 25.0 and 29.9 and 0.83 per cent are obese with BMI more than 30. And in the age group of 20-20 years 8.33 per cent of engineering students are underweight, 35 per cent are average weighed, 4.16 per cent are with overweight and 0.83 per cent are obese.

Table-1 reveals that majority of the male students i.e., 73.33 per cent are with average weight, 11.66 per cent with underweight, 10 per cent are with overweight and 05 per cent are obese. In case of female students 55 per cent are with average weight, 40 per cent are with underweight, 3.33 per cent with overweight and 1.66 are obese. More female students are underweight when compared to male students.

Table-1 reveals that there is a great influence of physical practice on BMI of the students. It is found that the students who regularly practice physical activity are having BMI ranging between 18.5 and 24.9 and are with average weight.

Constraints for physical fitness

There are various hindrances for the physical activity for the professional students apart from individual's complacent nature and attitude towards physical fitness. Among them highly influencing factor is the less scope for the physical activity in the overloaded curriculum. The course structure itself includes continuous participation of students and consistent performance. Academics keep students so much engaged that they cannot spare time for the physical fitness and it also let them make an opinion that it is school activity and not a college level activity. At the outset attitude of parents at home and faculty at institution also will not allow the students focus on the physical activity. The table-2 presents the opinions of professional students on the influence of academics on physical activity and fitness.

Table - 2
Influence Of Academics On Physical Activity And Fitness

Parameters	Male	Percentage	Female	Percentage	Total	Percentage
Strongly Agree	14	24	32	53	46	38.5
Agree	30	50	22	37	52	43
Neutral	09	15	03	05	12	10
Disagree	05	09	02	3.5	07	06
Strongly Disagree	02	02	01	1.5	03	2.5
Total	60	100	60	100	120	100

Source: Primary Data

When asked about influence of academics on physical fitness, 74 per cent of the male students and 90 per cent of the female students agree that there is a great influence of academics on physical activity. Most of the students opined that the academics keep them busy and will not let them to spare time for physical activity and fitness.

Conclusion

Though there is a great awareness about the physical fitness among the rural engineering students, due to busy academic schedules, lack of time and support from parents, institution and society somehow the physical activity and fitness is ignored and therefore it is discarded from their priorities. Therefore it is a great need to incorporate the physical activity into the curriculum so that physical fitness will be an integral part in the life and career of every professional student. Opinion and attitude of parents towards the physical activities also need to be changed and acceptance should be increased. The manthra of physical fitness cannot be ignored and should gain the prominence in academics of not only engineering students but also in all professional and non professional courses.

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Effect Of Diurnal Variation On Physical Fitness Componenets Of Sportsmen

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Abstract:
As sun moves from east to west, the energy level undergoes changes varying from the highest level in the morning to the lowest level in the evening. This variation called diurnal variation. None is immune from this variation. The physical fitness component of sportsmen also undergoes changes. A study was conducted to find out the diurnal variation among sportsmen. For this purpose Forty sportsmen were selected from the kakatiya university college of physical Education The sportsmen played different games the studies showed very interesting results, which are Presented in this paper.

Introduction
Physical fitness is very important factor of importance in any game sports .physical fitness is defined In terms of aerobic activity, which depend on body's ability to deliver and use oxygen in sufficient to the demands of increasing levels exercise Fitness implies a dynamic homeostatic, the ability to respond to life's physical emotional and social demands so as to lead a higher quality of life.

Methodology
The subjects were 40 sportsmen playing different games from kakatiya University College of physical education studying in bachelor degree courses. The age of the subjects ranging between 16to 23 years. The subjects were divided into four groups, each group 10 members on the basis of participation in different games selected for the purpose of study. Following groups were made 1. Volley Ball Group 2 Hand Ball Group 3 Kho-kho Group 4 Kabaddi Group

The component of physical fitness chosen for the present study

1. Standing broad jump
2. 50 yard dash
3. Nelson speed of movement
4. Modified sit and reach test
5. Shuttle run

The observation were made at following time interval on different days

Morning time Interval	8 am to 10 am
Noon time interval	1 pm to 3 pm
Evening time Interval	4 pm to 6 pm

The data were collected at this interval al on different days by administering specific tests the venue chosen was the playground of K.U

Results And Analysis
By using two way analysis of variance it was found that there was significance difference among Volley ball group, Hand Ball group kho-kho group and kabaddi group in physical fitness performance during different time today. Two way analysis of variance also reveals that there was significance different in standing broad jump. Modified sit reach test and shuttle run performance during time of day

Conclussions
With the limitation of the present study on the basis of findings, the following conclusions are drawn

1. In standing broad jump performance the best by all the group was shown between 4 pm to 6pm, then between 8amto 10am, and least performance was shown between 1pm to 3pm
2. Modified sit and reach and shuttle run performance by all the group was shown between 8am to 10am, followed by between 4pm to 6pm and least performance was shown between 1pm to 3pm.

The results of the study also showed that there is a influence of diurnal variation on the mean performance of selected physical fitness performance during different time.

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The comparative study of physical and physiological variables with short and medium distances runners

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Abstract
The purpose of the study was to compare the athletes of different events and know some physical and physiological variables of medium distance runners (800m & 1500m) and short distance racers (100m & 200m). The study followed the experimental method on a sample of 30 students randomly selected from Haryana played from India scheme test (SPAT). Their ages ranged from 14-20 years. The students were classified into two experimental groups. The first group is short distance runner had participated in Dist. Level (SPAT) held in Bahal Bhiwani. The second group is Medium Distance Runners were selected for Dist. Level (SPAT) held in Bahal Bhiwani). The two groups were compared on 20 physiological and physical variables, including height, weight, body surface, metabolism rate, respiration rate, vital capacity, blood pressure, pulse rate, vertical jump, reaction time, scholastic aptitude, speed & strength. The greatest differences were found in measures of pulse rate in vital capacity and in vertical jump ability. Medium distance runners tended to be somewhat taller but lighter than the sprinters and surpass sprinters on most measures of scholastic aptitude and achievement.

Introduction

Great athletes are not born, they are made -Seb Coe

Athletics is the basic sport for all and so it has assumed greater importance in recent years. The physical education, coaches and sports scientists are at present becoming more aware of scientific information related to the athletes potential proficiencies in competitions .An important feature in the development of track and field's events is by applying the knowledge of the mechanical principles which are essential to its skull.

Physical and physiological fitness are the total of various independent variables. Generally these variables are performance originated and depend upon the functioning of different systems of the body. Different sports events demand a combination of different physical variables for high quality performance there are certain physical fitness and physiological components, which are discussed at various levels in relation to performance. Some of them are height, weight, body surface, metabolism rate, respiration rate, vital capacity, blood pressure, pulse rate, vertical jump, reaction time, scholastic aptitude, speed & strength.

Human physiology is the bird in the house of the mechanical, physical, and physiological functions of human in good health there, organs, and the cells of which they are composed. The physiological factors of The athletes limiting one's performance in sports are also well known. It is the understanding of interaction of all these factors that can help us in designing the way for selecting the children's for appropriate game and training. Among the various physiological parameters characteristics play an important role in the attainment of high level of sports performance that can ultimately be realized by taking into consideration the various physiological variables. Physical and physiological variables may be defined as those variables which are directly linked with physical and physiological systems such as heart rate, blood pressure, vital capacity and physical components.

Methods

Subjects:-

The present study was carried out on Thirty track athletes (male). The sample was selected for the study, fifteen for short distances and fifteen for medium distance, who was participating in SPATE held in Behal Bhiwani from Haryana state. For short distance running we include 100m and 200m race and for medium distance running we include 800m and 1500m race. For this comparative study one of the facts which confirm the impression that they represent rather sharply defined athletic role. The Age of Subjects are ranged from 14 to 20 years.

Procedure:

For convenience of discussion, the variables on which the short distance runner and the medium distance runner were compared, divided into two groups, Physical and Physiological variables. The Physical variables in included Age, height, weight, Pull-ups, sit-up, shuttle run, standing broad jump and sit and reach test. Physiological variables include Vital capacity, systolic Blood pressure, Pulse pressure, Resting Heart Rate, Resting Respiratory Rate, Negative Breath holding Capacity, Positive Breath holding Capacity, Fat%, Lean Body Weight, Metabolism and Body Surface. All the variables were selected with the recommendation of Physical education experts and proper writers himself. Some data were collected from official records of the admission office. Mean, standard deviation of each variable of short distance runners and Medium distance runner were compared, and significance of the difference between the means was evaluated by means of t test at .05 level of confidence

Result and Discussion-

The scores of each physical and physiological variables are presented in the following Table. Table 1 and 2 summarize the results. Table-1 contains descriptive statistics and tests of significance between means for short distance runner and medium distance runner on each physical variable**.** Table-2 contains descriptive statistics and tests of significance between means for short distance runner and medium distance runner on each physiological variables.

Table-1Comparisons Of Short Distance And Medium Distance Runners On Physical Variable

Variables	Short Distance Runner			Medium Distance Runner			T-Test
	N	Mean	S.D.	N	Mean	S.D.	
Age (Years)	15	17.56	3.38	15	18.02	3.65	0.36
Height (In.)	15	69.01	1.5	15	67.92	2.1	1.64
Weight (Kg.)	15	48.25	2.52	15	49.75	1.96	1.82
Pull-Ups (Count)	15	8.42	1.1	15	9.36	1.63	1.85
Sit-Up (Count)	15	30	3.55	15	34.21	3.42	3.31*
Shuttle Run (Sec.)	15	10.52	1.82	15	11.91	2.19	1.89
Standing Broad Jump (Mt.)	15	1.75	2.19	15	1.82	1.19	0.11
Sit And Reach Test (Cem.)	15	15.85	2.39	15	14.18	1.85	2.14*

*** Significant At .05 Level Of Significance Too .05(28) =2.04**

Age (years) of Short Distance Runner and Medium Distance Runner were compared with use of Birth Certificates. No significant difference Age (years) (Table-1 line 1), but means of short distance runner slightly higher.

Height (inch.):The mean height (table 1 Line 2) measured in inch by stadiometer for Short Distance Runner and Medium Distance Runner got less difference (69.01 & 67.92).

Weight (kg.):The mean Weight (nearest gram) for Short Distance Runner and Medium Distance Runner was about 48.25 kg. While Medium distance runner averaged 49.75 as shown in (Table-1 line 3), the difference in weight was statistically insignificant.

Pull-ups (count):No significant difference Pull-ups (count) (Table-1 line 4), was found in Short Distance Runner (8.42) and Medium Distance Runner was (9.36), but means of Medium distance runner were higher.

Sit-up (count):Most of Sit-up (count) of Short Distance Runner (30.00) and Medium Distance Runner (34.21) were found. The significant difference **(**Table-1 line 5) and Medium distance runner granted better performance.

Shuttle Run (Sec.)No significant difference was found in Shuttle Run (Sec.) (Table-1 line 6) means of shuttle run for Shuttle Run (Sec.) of Short Distance Runner (10.52 while Medium Distance Runner found higher mean (11.91).

Standing Broad Jump (Mt.):Standing Broad Jump (Mt.) of Short Distance Runner and Medium distance Runners means were (1.75) & (1.82) (Table-1 line 7) and no significance difference was found at .05 level of confidence.

Sit and Reach Test (Cem.) Show that significant difference was found & means of Short Distance Runner (15.88) was higher than the Medium distance Runner (14.18) at .05 level of confidence.

Table-2Comparisons Of Short Distance And Medium Distance Runners On Physiological Variable

Variables	Short Distance Runner			Medium Distance Runner			T-test
	N	Mean	S.D.	N	Mean	S.D.	
Vital Capacity (Liters)	15	3.25	1.05	15	2.91	1.15	2.17*
Systolic Blood Pressure (cm. Mercury)	15	122.57	6.93	15	124.87	8.01	0.84
Diastolic Blood Pressure (cm. Mercury)	15	78.28	5.92	15	79.37	7.82	0.43
Pulse pressure	15	48.13	7.82	15	47.02	9.01	0.36
Resting Heart Rate (Pulse Per Minute)	15	60.01	2.19	15	64.92	2.29	6.00*
Resting Respiratory Rate (Pulse Per Minute)	15	24.52	1.29	15	23.1	2.15	2.19*
Negative Breath holding Capacity	15	70.25	7.51	15	69.81	7.25	0.16
Positive Breath Holding Capacity	15	92.05	13.15	15	89.1	12.25	0.64
Fat Percentage	15	9.41	2.41	15	9.81	2.11	0.48
Lean Body Weight (Percentage)	15	48.88	3.06	15	51.92	2.99	2.75*
Metabolism (calories/hr.at STSP)	15	89.91	11.65	15	88.29	12.52	0.37
Body Surface (Sq. Meter)	15	1.84	0.06	15	1.86	0.09	0.96

*** Significant at .05 level of significance too .05(28) =2.04**

Vital Capacity of Short Distance Runner and Medium distance Runner were compared with use of Dry spirometer. A significant difference was found on Vital Capacity (Table-2 line 1), of both sections but mean of short distance runner slightly higher.

Blood Pressure

Table 2 (Line 5 & 6) Shows significant difference and means of Medium distance runner (64.92) were much higher than short distance runner (60.01) in resting Heart Rate while in Resting Respiratory rate means of short distance (24.52) was found being her that in Medium distance runner (23.1).

Resting Respiratory Rate (Pulse Per Minute)

Resting Respiratory Rate (Pulse Per Minute) of Short Distance Runner and Medium distance Runner was compared with the use of Tape. Significant difference Resting Respiratory Rate (Pulse Per Minute) (Table-2 line 6), but means of Short distance runner slightly higher.

Breath holding Capacity)

Negative & Positive Breath holding Capacity was founded insignificant difference (Table-2 line 7&8), but a means of Short Distance Runner (70.25 &82. 05) Were slightly higher than Medium distance Runner.

Fat Percentage & Lean Body Weight (Percentage)

Lean Body Weight (2.75) was found significant differences in Short Distance Runner & Medium distance runner (Table-2 line 10), while Fat Percentage obtained insignificant difference (Table-2 line 10), but a means of Medium distance runner were slightly higher.

Metabolism (calories/hr.at STSP)

Rate of Metabolism (Table-2 line 11) was not measured under based conditions but the readings were observed uniformly for short & medium distance runners. The measurements were made before the activity. Each subject was required to Sit for rest for 20 min before the metabolism rating were recorded. The Benedict. Both metabolism Apparatus was used. Short Distance Runner means the rate (89.91). Calories per hour was higher than the Medium distance Runner (88.29).

Body Surface:

Body Surface in Square meters was estimated from the Du-Bois Body surface chart developed by Booth by and Sandi ford of mayo clinic and reported by Clarke (1959). Body Surface of subjects was based on height and weight. As the shorter distance runners were their mean body surface were not much different. 1.84 squared meters for the short Distance runner and 1.86 square in for Medium distance runners.

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Effects Of Aerobic Exercises On The Selected Physiological Variables Among The Andhra Pradesh Sports School Players

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Introduction

Scientific research has contributed to the body of knowledge in every field and that is true in case of Physical Education and Sports also. Exercise physiology is an interdisciplinary area, which has taken a prominent place in contributing scientific knowledge to physical education and sports.
Physical activity provides a unique opportunity for self-expression, social interaction, and personal challenge. It can help students develop self-confidence and a positive self-image by giving them a sense of accomplishment while they are learning motor skills. Yet achieving these benefits can be extremely difficult. If students feel self-conscious, afraid of failure or unable to contribute to group success, they will be reluctant to engage in challenging activities and more apt to participate in the all-too-common practice of ridiculing their peers. Physical education will be a place where every one can find enjoyment and empowerment, regardless of ability level.

Statement Of The Problem

The purpose of the study was to make a comparative analysis of the physiological adaptations resulting from aerobic training on Andhra Pradesh Sports School players in selected physical and physiological variables.

Hypothesis

It was hypothesised that there might be significant improvement in the selected physiological variables (Glucose, Glycogen, Lactic acid level, Lactic dehydrogenase and Pyruvic acid) resulting from thirty minutes aerobic training, when compared with twenty minutes aerobic training.

Selection Of Subjects

Sixty subjects of Andhra Pradesh Sports School players, Hakimpet, Hyderabad were selected randomly. These sixty subjects were divided into three groups, consisting of two experimental and one control group with twenty subjects in each group. The subjects selected were medically fit for the present study. The requirements and the procedure of the present study were explained to all the subjects and they have agreed to undergo testing and training programme voluntarily. Taking care of hygiene and sterility conditions collected the blood samples.

Reliability Of Data

The reliability of data was measured by ensuring instrument reliability and tester competency**.**
Instrument Reliability: The instruments used in this study were procured from Andhra Pradesh Sports School players, Hakimpet, Hyderabad and Siddhartha, Endorcrine Diagnostic Centre, Basheerbagh, Hyderabad which were supplied by well known manufacturers catering to research laboratories and hence were considered accurate and reliable.
Tester Reliability: To ensure that the investigator was well versed with the technique of conducting the tests, the investigator had a number of practice sessions in testing procedures, under the guidance of the experts. The investigator took all the required measurements with the assistance of qualified testers, who were well acquainted with the testing procedure.

I. Slow Continuous Method
Ii. Fast Continuous Method
Iii. Fartlek Method

Level Of Significance

For testing the significance differences in selected physiological variables obtained at initial testing (that is before commencement of experimental treatment) and after twelve weeks of testing of Andhra Pradesh Sports School players in aerobic exercise programmes (experiment 'A' subjects and 'B' subjects). The level of significance chosen was 0.05.

Findings

Table 1Showing the Mean, Standard Deviation and t-value of Pre- and Post-tests of Glucose among Andhra Pradesh Sports School Players

Group	Mean	SD	df	t-value	p-value
Control					
Pre-test	66.1683	5.94592	11	0.415	NS
Post-test	66.3350	6.56120			
Experimental 20 minutes					
Pre-test	61.3333	10.42433	11	3.157*	0.001
Post-test	68.7333	6.57470			
Experimental 30 minutes					
Pre-test	67.0000	3.22490	11	3.488**	0.000
Post-test	71.1250	4.12235			

The table 1 shows that the t-value obtained in respect of experimental group of aerobic 20 minutes (t=3.157) and experimental group of 30 minutes (t=3.488) is highly significant at 0.01 level in respect of glucose among Andhra Pradesh Sports School players. The control group shows insignificant (t=0.415) improvement in glucose among Andhra Pradesh Sports School players.

Table 2Showing the Mean, Standard Deviation, and t-value of Pre- and Post-tests of Glycogen among Andhra Pradesh Sports School Players

Group	Mean	SD	df	t-value	p-value
Control					
Pre-test	333.3333	5.88784	11	1.351	NS
Post-test	336.3333	5.92171			
Experimental 20 minutes					
Pre-test	336.3333	6.25033	11	1.013*	0.001
Post-test	343.5000	12.19426			
Experimental 30 minutes					
Pre-test	338.6667	9.95322	11	2.297**	0.000
Post-test	348.3333	12.81666			

The table 2 indicates that the pre- and post-tests on glycogen was significant only in the experimental group of 30 minutes aerobic exercises among Andhra Pradesh Sports School players. The experimental groups of 20 minutes aerobic exercises show insignificant results on glycogen (t=1.013) and this may be due to unforeseen changes. The Control group has no improvement, as there was no experimental treatment as far as glycogen is concerned.

Table 3Showing the Mean, Standard Deviation, and t-value of Pre- and Post-testsof Lactic Acid among Andhra Pradesh Sports School Players

Group	Mean	SD	df	t-value	p-value
Control					
Pre-test	7.4167	0.31033	11	1.739	NS
Post-test	7.6400	0.46648			
Experimental 20 minutes					
Pre-test	7.2383	1.03269	11	3.842*	0.001
Post-test	8.0067	1.06755			
Experimental 30 minutes					
Pre-test	7.9767	0.90041	11	2.295**	0.000
Post-test	8.9617	0.53611			

From the obtained results it is very clear that the insignificant differences exists between Pre-and Post-tests for Lactic Acid of control group, as the obtained 't' value is 1.739. From the table 3 it is very clear that the significant differences are seen between Pre-and Post-tests for Lactic Acid of Experimental (twenty minutes), which is highly significant. The obtained 't' value of 3.842 is much higher than the table value at 0.01 level of confidence. From the obtained results it is clear that the significant differences between Pre-and Post- tests for Lactic Acid of Experimental (thirty minutes) was highly significant. The obtained 't' value of 2.295 was greater than the table value at 0.01 level of confidence.

Table 4Showing the Mean, Standard Deviation, and t-value of Pre- and Post-tests of Lactate dehydrogenase among Andhra Pradesh Sports School Players

Group	Mean	SD	df	t-value	p-value
Control					
Pre-test	133.7917	23.76004	11	2.001	NS
Post-test	143.3567	16.78812			
Experimental 20 minutes					
Pre-test	149.7333	37.2980	11	1.496*	0.001
Post-test	162.0000	36.3978			
Experimental 30 minutes					
Pre-test	157.0167	35.67242	11	2.058**	0.000
Post-test	174.5633	25.30483			

From the table 4 obtained results it is very clear that the significant differences exists between Pre- and Post-tests for Lactate Dehydrogenase of control group, which is insignificant. The obtained 't' value is 2.001. The results of table 4 shows that the Pre-and Post tests for Lactate Dehydrogenase of Experimental (twenty minutes), the obtained 't' value of 1.496 at 0.01 level of confidence was significant. For experimental group (thirty minutes) the obtained value of t ratio is 2.058 said to be highly significant. Thus the Lactate Dehydrogenase has improved significantly.

Table 5Showing the Mean, Standard Deviation, and t-value of Pre- and Post-tests of Pyruvic Acid among Andhra Pradesh Sports School Players

Group	Mean	SD	df	t-value	p-value
Control					
Pre-test	0.6383	0.18957	11	2.085	NS
Post-test	0.6967	0.07274			
Experimental 20 minutes					
Pre-test	0.5917	0.20213	11	1.260*	0.001
Post-test	0.6267	0.17154			
Experimental 30 minutes					
Pre-test	0.5133	0.07174	11	5.069**	0.000
Post-test	0.6400	0.02828			

From the table 5 indicates the statistical analysis it was found out that t-ratio was significant in the experimental group of thirty minutes on pyruvic acid among Andhra Pradesh Sports School players. Whereas for Pyruvic acid pre- and post-tests both control and experimental group – twenty minutes has insignificant t-ratio values of t=2.085 and t=1.260 were obtained respectively.

Conclusions

Based on the statistical significance the following conclusions are drawn.

1. The mean, standard deviation and t-value of pre- and post-tests of glucose of control and experimental 20 minutes and experimental 30 minutes were shown highly significant. This indicates that the experimental 30 minutes (t=3.488) was highly significant than the experimental 20 minutes (t=3.157) of glucose among Andhra Pradesh Sports School players.
2. The t-value of experimental 20 minutes is highly significant than the experimental 30 minutes (t = 3.842 and t = 2.295) respectively, in respect of lactic acid may be attributed that this variation is due to unforeseen changes.
3. In respect of pyruvic acid the obtained t-values are t=1.260 and t=5.069 for experimental 20 minutes and experimental 30 minutes respectively, indicates that 30 minutes aerobic exercise treatment shown highly significant effect on the selected physiological variables among the Andhra Pradesh Sports School players.

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Relationship Between Ball Height And Ball Velocity In Volleyball Spiking

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Abstract
Introduction: Purpose of the present study was to analyze the short set and high set volleyball spiking action and understand the relation between ball height and spiked ball velocity.
Methods: The action of short and high set ball spiking of eight male intervarsity volleyball players (1.78±0.05m, 65.09±6.83kg, and 22.5±2.0 yrs) was recorded by a digital video camera(Sony, 24fps) of East Zone Intervarsity Volleyball Tournament. The ball height and ball velocity after spike were calculated by using appropriate motion analysis software. Mean, standard deviation and Coefficient of correlation were computed to analyze the data.
Results and Discussion: Result indicated that there was no significant relationship between ball height and spiked ball velocity with the value of co-efficient of correlation of -0.456 for short set ball spiking and +0.056 for high set ball spiking. The result of the present study indicated that the ball height may have no relation on the ball velocity after spike or impact with the hand.
Conclusion: From this study it may be concluded that there was no significant relationship in between ball height and spiked ball velocity for front row spiking in volleyball.
Keywords: volleyball spiking, motion analysis, ball height, spiked ball velocity

Introduction:

Volleyball has been played around the world for over one hundred years. It is estimated to involve many participants worldwide making it the most popular participant sport in the world. The volleyball spike is one of the most important offensive weapons in the competition and the most frequently used technique to obtain a point. The athlete is expected to jump and hit a ball with maximum force and accuracy at the approximate peak of the jump. The biomechanics of volleyball refers to the application of this field specifically to the movements in the sport. The knowledge gained from studying the biomechanics of volleyball can help prevent injury, improve technique, and make an elite athlete perform to the best of his or her ability. Based on the variety of movements, the analysis of the volleyball spike is a complex approach. The previous researchers (Coleman et al., 1993; Davila et al. 1994) have investigated front spike techniques of ordinary players. Coleman et al. (1993) indicated that the volleyball jump spike can be divided into the following six phases: approach; plant; takeoff; flight; the hitting action; and landing and recovery. They reported that the mean post-impact ball velocity was 23.7±2.1m/s. Successful spike depends heavily on ball height at set and ball velocity after spike. So the purpose of the present study was to analyze the short set and high set ball spiking action and understand the relation between ball height and spiked ball velocity.

Methods:

The subjects of the present study were eight male intervarsity (East Zone Interuniversity Volleyball Tournament) volleyball players (1.78±0.05m, 65.09±6.83kg, and 22.5±2.0 yrs) from Visva-Bharati University and University of kalyani. The action of the front row spike for short and high set ball of the eight spikers was recorded by a digital video camera (24fps). Following a brief warm up and stretching period, an assistant passed the ball to the setter, who set the ball for each subject to perform five front row spikes for both short and high set ball. Only the successful spiking action was analyzed to measure the selected kinematic parameters with the help of motion analysis software. After projecting a particular frame the stickman configuration was drawn from the frame. The time information was obtained from the frequency of the camera and that was 24fps.The ball height was defined as the vertical displacement of ball by a setter from the ground to the highest point. The ball velocity was defined as the velocity with which the ball travels after impact (spike) with the hand. A Pearson Product Moment Correlation was used to examine the relationship between ball height and spiked ball velocity.

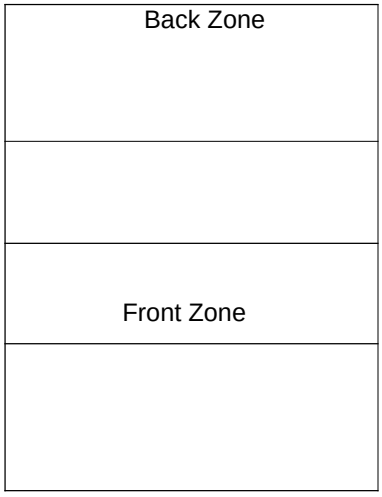


Figure 1 represents the filming environment for collecting the data for the present study.

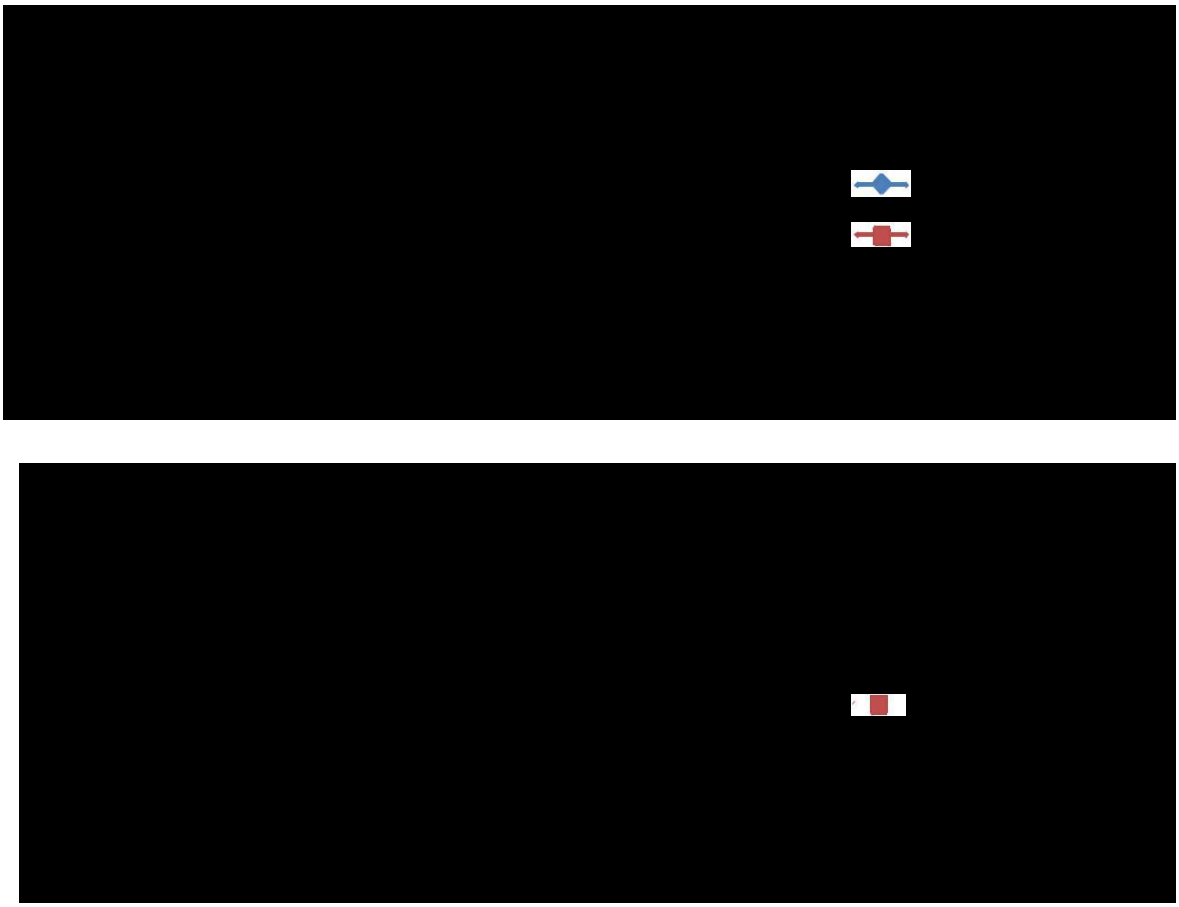
RESULTS AND DISCUSSION:

Table 1 presents selected kinematic parameters for the eight spikers. The mean ball height of front row spiking for short set ball was 3.72m. and for high set ball was 4.08m. The high set ball spiking (19.09m/s) have greater values than the short set ball spiking (18.02m/s) on ball velocity. The front row spiking for this study have a smaller ball velocity than the Huang et al. (1998) one foot jump spike (20.19m/s). The result of the Pearson Product Moment correlation showed that there was no significant relationship between ball height and spiked ball velocity with the value of co-efficient of correlation of -0.456 for short set ball and 0.056 for high set ball. Coleman (1997) found that the ball velocity was significantly correlated with hand impact velocity and the jump height was significantly correlated with vertical velocity of CM. The result of the present study indicated that the ball height has no relation with the ball velocity.

Table 1: Selected Kinematic Parameters for Front Row Spiking in Volleyball

SHORT SET BALL SPIKING				HIGH SET BALL SPIKING		
Subjects	**Ball Height (m)**	**Ball Velocity (m/s)**	**Coefficient of Correlation "r"**	**Ball Height (m)**	**Ball Velocity (m/s)**	**Coefficient of Correlation "r"**
MG	3.74	21.95	**-0.456**	4.52	20.04	**+0.056**
NG	3.45	21.95		3.63	20.99	
KM	3.99	16.23		4.41	18.14	
AS	3.69	13.36		3.90	18.14	
MS	3.75	16.23		4.05	20.04	
SG	3.69	19.09		3.99	16.23	
KB	3.75	15.27		4.20	21.95	
LG	3.72	20.04		3.96	17.18	
Mean	**3.72**	**18.02**		**4.08**	**19.09**	
SD	**0.15**	**±3.20**		**±0.29**	**±1.97**	

Figure 2: Ball Height and Spiked Ball Velocity for Short Set Front Row Spike



Conclusion:

This study describes the kinematic characteristics of the male short set and high set ball front row spike. It was noted that high set front row spike had greater spiked ball velocity than that of the short set front row spike. From the result of the study it may be concluded that there was no relationship in between ball height and spiked ball velocity in front row volleyball spiking for short set and high set ball.

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Scientific Traning And Sports Performance In Various Games & Sports.

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Introduction

Physical Education provides us to be Physically fit, mentally alert, socially wellbeing and emotionally stable.Physical Education basically involves mass participation of the students offering varieties of activities suitable to their age groups. This enables the participants to understand the Importance of physical activity and the benefits achieved through regular programmes. When a child involved in a regular physical activity, he develops various physical components required for efficient movement. Based on these parameters children are divided into various groups looking in to their anthropometric qualities. This helps the physical Education teachers or coaches to concentrate on their specialized discipline as part of the methodical training scientific training or methodical training concept took momentum when foreign coaches are invited to coach Indian National teams in various disciplines creating a solid base for Indian teams to do well in the international competitions.

A part from this, the Govt. of India took another important decision to sponsor National Coaches of various disciplines to foreign countries for advanced training inputs. This helped to acquaint with what is happening around the world in order to train the National teams of our country.This helped largely to concentrate on the scientific training which is giving significant results in the Indian Sport today.

In order to make a successful formation of the players, the experience of the coach/Physical education teacher is most important. The coach must have the knowledge of the effective training methods, and suitably organizing the training programmes.

Sports training is the process of preparing the players for giving best performance in the competitions. The performance can be best only when all the players are equal performance levels in all the departments of the game. The requirements made in the enhancement of performance should be done gradually and systematically. The coach must maintain the proportion between the essential parts of the game or sport during the formation period, in order to maintain the balance in their performance levels.

Basically scientific training is divided into **Four** major parts.

I.Physical Preparation
II.Technical Preparation
III.Tactical application
IV.Education

Physical Preparation :-

From the methodical point of view the physical abilities of players are the prerequisite for successful development of techniques of the discipline, greater the degree of physical fitness, higher the ability in learning the fundamental skills. The relation between the physical formations depends upon the training state of the players. The rule is that the lower the state of training the more concentration on the general development exercises, and higher the state of training the more is the special physical exercises.

Technical Preparation.

The training methodology adopted for learning various techniques has a great significance. The main aim of scientific training is to acquire highest degree of perfection in all the skills, Learning fundamental skills varies with the standard of the players, thus coaching inputs must be provided accordingly.

Tactical application :-
Tracties is nothing but applying the technique with little modification coveriently in order to get success over their opponents. This has a great importance in elite competitions.

Education :-

Again has three parts
Teaching/Learning of all Fundamental rules of the game and their through interpretations.

Yogic Practice :-
In recent times yogic practice has became paramount importance in enhancing sports performance. The research evidences proved in that selected yogasanas have tremendously improved concentration and reduced tension among the top class athletes.

Psychological preparation :
The psychological preparation of an athlete is another important dimension which helped to stabilize mental balance during pre-during and post competition periods. This implication is seen more in individual events over the team sports. However, this preparation is a must in order to improve the performance levels for greater success.

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Gender Bias in Sports: It's Problems and Perspectives

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ABSTRACT
Sport is an integral part of the culture of almost every nation. However, it's use to promote gender equity and empower girls and women is often overlooked because sport is not universally perceived as a suitable or desirable pursuit for girls and women. In both subtle and explicit ways, women face many barriers to participating in sports, which prevent women and girls from reaping the many benefits that can be gained from playing sports and engaging in physical activity. The gender discrimination in sports is males that dominate in sports at all levels and women athletes have less or no recognition, receive lower levels of media coverage, and are subjected to sexist and derogatory language in the media and from people in their communities. Existing social constructs of masculinity and femininity — or socially accepted ways of expressing what it means to be a man or woman in a particular socio-cultural context — play a key role in determining access, levels of participation, and benefits from sport. It is true in all countries that girls and women are less likely than boys and men to participate in sport, and sport continues to be dominated by males. It is a mistake, however, to assume that this is because girls and women do not wish to participate.
This paper throws light on the gender discrimination in sports. This study emphasizes on the analysis of different perspectives and benefits of sports.
Keywords: Gender, Discrimination, Athletes, Dominance, Prejudices, Myths.

In the history of sport, women's roles and involvement have been less than equal to their male counterparts. In many ways, the equality is not shown for women in sport lead the denial of equality for women in almost all given societies.

Disparities in Participation
Women were virtually excluded from sports in ancient Greece (except in Sparta). Indeed, women were strictly barred from even viewing the Olympic Games, and punishments were prescribed for any women caught at the Games. The women did, however, create their own program of sports-The Heraea Games, in honor of Hera, the wife of Zeus. These were athletic events, held every four years, for women only. This is just be called the beginning of women in sports.
Sage (1970) lists three reasons for women's historical insignificance in sport:
1. Women's cultural "tasks" have been child rearing and home making. This left very little time for sport participation for women.
2. The deep seated suspicion in the society is that vigorous sports were a health hazard for women.
3. Social mores of masculine-feminine sex roles have discouraged women from participating in sport.

Lack of Female Role Models
Sports personalities flood news headlines, endorse all varieties of products and, in this globalized world, are among the most recognized celebrities worldwide. Even children in remote rural Indian villages carry notebooks depicting cricketing stars who play for India or international players who earned reputation, and can name their favorite players. These stars serve as role models and idols for children around the world, particularly during major sporting events, such as the World Cup. Yet female sports figures are noticeably absent.
As a result, girls who aspire to participate in sports have less exposure to female role models. Consequently, they are less likely to benefit from the positive example that these figures can serve. An example from research conducted in few villages of Andhra Pradesh illustrates this dearth of female sports role models. When a sample of boys and girls were asked to name their sports idols, 49 percent of girls could not name a sportsperson at all, and of those who could, only 17 percent mentioned a woman. Only 11 percent of boys questioned could not name a sports idol, and very few named a female sports star. Without female athletes or cricketers to look up to, girls miss out on the encouragement, inspiration, and exhilaration that can come from looking up to, and cheering for, a sports idol.

For example, disproportionately fewer females are socialized into sport at both the recreational and competitive levels. Strong cultural prescriptions still govern what is appropriate activity for males and females. Sport to a great extent, is still more closely identified with the male role. Also, males control the decision- making process of most competitive sports. In short, play, games and sport represent yet another domain where there is a gender – based double standards in terms of opportunities, values, and encouragement. When one look into the cricket in India, which is considered as a 'religion', has parity among men and women cricketers. An entrant in men's cricket with a little bit fame is remembered, but a female cricketer, who is world number one in one day cricket almost all for the last two years, is not known to many. The unfortunate women cricketer is 'Mithali Raj' from our own Hyderabad. Most of the people knew 'Rahane' a male upcoming cricketer from India, but a top world class women cricketer is not known to the people, who lives in their own dockyard, leave about the country. Likewise there are plenty of sports women who are world class but lesser known or almost not known. Few of them are boxer 'Marycom' is not known until she won the Olympic medal though she was world renowned boxer and two time world champion in the category she belongs to in boxing. Deepika Kumari from archery was ranked within the top 5 for long. She won the world championship in the field of archery and got good name in their circles. How many of us knew her. On similar lines there are gifted sports women who could not get their due in getting the recognition as their male counter parts does all over the world.

Disparities in Media Coverage

The media performs a vital role within society and in particular is a powerful tool which 'influences our beliefs, attitudes, and the values we have of ourselves and others as well as the world surrounding us. Accordingly, the media does not merely reflect reality, instead it can entail a process of negotiation and reconstruction, which thus shapes and manages our beliefs and opinions. In recent years the mass media has played an active role in side-lining and trivializing female sporting success, with the ultimate aim of preserving sport as a male domain. For example, in the recently conclude T20 women's cricket world cup hosted in India, only the matches played by India were only telecasted live whereas on the other side there was club level male cricket going on, was telecasted live. If the most viewed sport in India has this kind of attitude shown by media one can imagine the fate of lesser known sport. This is nothing different all over the world about the coverage of women events.

It is identified that a significant disparity between the coverage of women and men's sport in all parts of the media, despite the rapid growth of women's sport in the last 30 years. On average, men receive far more coverage than any women's sport, and moreover, this coverage is much wider. The message is clear, female athletes are second rate, female sport is of little importance and society accepts only certain sports for female competitors, unfortunately for women, the television schedules are built around male and not female preferences. Furthermore, the evidence supports the view that women are systematically excluded and side-lined, 'in nearly every aspect – column inches, running time, persons quoted, placement of articles, presence, size, length, and placement of photographs or video type, range of sports and size of headlines – women's coverage lags behind.

Cultural and Religious Barriers

Many of the myths have been initiated and perpetuated by the medical and teaching professions and by journalists. These unfounded beliefs suggest, for example, that female participation in sport at any level

Is harmful to the female reproductive system and a threat to childbearing;

Masculinises a female, particularly her facial and upper-body appearance;

Threatens the development of male masculinity if girls out-perform adolescent boys in sport;

Wastes human and economic resources because females' performance levels are lower than males';

Is not important for their social development, because they do no need or value achievement, aggressiveness, competitiveness, independence, or productivity.

Brown (1982) suggests the explanations are complex and involve historical factors, outright discrimination, and events occurring in other societal institutions. Some of the hypothesized contributing factors are

Continuing prejudices, taboos, and stereotypes that lead to sport being viewed as a male "preserve"

The lack of power in gender relations and the strength of "old boys" networks and the lack of or weakness of "old girls" network;

A lack of qualified female personnel to coach and administer

athletics; Unconscious or unintended discrimination by males;

Failure of women to apply for job vacancies in athletics;

Time constraints imposed on married or divorced females by family
responsibilities; A lack of female role models as participants and leaders; and
A continuation, in some societies and some segments of society, a long-standing gender-role socialization processes that discourage female from sport.
Throughout the struggle to become more involved in sport, the situation of females has paralleled that of blacks. Both groups were
Prohibited from participating because of cultural norms or written
restrictions; Forced to sponsor their own competitions and leagues; and
Benefactors of federal legislation guaranteeing equal rights.

Disparities in Rewards
Sexism has led to double standards within sport. Women have received less than favorable or less than equal treatment in a number of ways, including
Lower budgets;
Fewer hours allocated to
facilities; Shorter schedules;
Fewer athletic scholarships
Fewer events or types of sport available;
Fewer women in leadership positions in sport organizations;
Submission to sex-identity tests at international competitions;
Differential (i.e., lower) prize structures (e.g., in golf and
tennis); Less media coverage;
Delayed or restricted opportunities for marriage among elite athletes
Different orientations to games at lower levels of involvement
Being encouraged (i.e., socialized) to restrict participation to such socially acceptable sports as tennis, swimming, or gymnastics
Less encouragement from parents to participate in sport, especially in less educated or blue collar families;
Differential play experiences for young children, which tend to perpetuate the system of gender stratification;
Less access to commercial endorsements (only about 2% of all endorsements go to female athletes); and
Higher status attached to the role of cheerleader than to that of athlete.

Medical Beliefs
According to women working in the athletic programs of U.S. colleges and universities, the major reasons for this under representation are, in order of importance
1. Men's use of an efficient "old boy" network to get jobs.
2. The failure of women to use their own network to help female friends and associates.
3. The existence of unconscious discrimination in the selection process.
4. Lack of qualified women coaches and administrators.

According to men the reasons are in order of importance:
1. Lack of qualified women applicants.
2. Unwillingness among women to travel and recruit athletes.
3. Failure of women to apply for jobs.
4. Time constraints on women with families.

Myths Perpetuating Inequalities
There are some myths which maintain inequalities in sports between men and women. These are illustrated as follows:

1. Physiological Myths: It includes that strenuous participation in sport may lead to problems in child bearing. The activities in many sport events may damage the reproductive organs or breasts of women. Women have a more fragile bone structure than men, making injuries more likely. Intense involvement in sport causes menstrual problems. Sport involvement leads to the development of unattractive, bulging muscles.
2. Performance Myths: As per performance myths discrimination has also been justified by arguing that women are incapable of performing at the same level as men, they should have fewer opportunities and fewer rewards for achievements.

3. Socio Psychological Myths: Some people have believed that a woman's participation in sport can threaten her femininity and that when her participation occurs with or against a male it can threaten his masculinity. Because they do not want to interfere with what they see as normal development, these people recommend a caution in making sport opportunities available to females.

4. Maintaining inequality through mixed socialization messages: Myths and belief systems may be used to "justify" sex discrimination in sport, but the participation rates of females are influenced by more than myths. Patterns of opportunities and patterns of constraints are also shaped by the socialization experiences of women and girls. As infants, girls have traditionally been handled more gently and protectively than boys. Boys have been thrown into the air more often, given more toys requiring active play and the use of motor skills, and have been allowed to explore more of their physical environments before being "cautioned" and constrained by their parents. Girls have been watched over more closely even before they have started to walk. This pattern of "protectiveness" and constraints is continued through childhood and it restricts girl's involvement in physical activities. When a young girl asks one of her parents for permission to go and play, she often hears something like this:

Stay in the house. Do
not leave the yard
Do not go far away from the
house Go with a friend
Play with the children who you know
Get back home at exactly 4 o' clock – no
later Do not do anything dangerous
Keep your clothes clean
Do not play rough or get hurt
Do not get in fights or arguments with your
friends Take your little brother or sister with you

Benefits of Sport

Having addressed some of the challenges facing women's and girls' participation in sport, let us turn to the benefits that they experience when these challenges are overcome.

Health. By participating in sports, girls can derive many of the benefits long reserved for boys. Physical activity develops healthy life style habits and is beneficial for physical and mental health. Just four hours of physical activity a week has been shown to reduce the risk of many diseases, such as breast cancer and heart disease. Developing such positive habits in childhood can have life-long positive benefits. Moreover, the beneficial effects of sport on individual health accelerate overall health indicators of the community.

Confidence. Participation in sports can help to build self-confidence, a crucial component in empowering girls and young women to take on new roles and to challenge the barriers that they encounter. Moreover, participation in sport promotes body consciousness, which has been shown to reduce rates of teenage pregnancy.

Teamwork. Membership on a sports team has positive benefits in terms of building relationships between team members, and teaching teamwork skills, which can later be useful to women in a professional environment.

Role Models. Sport can also be used to motivate groups of supporters by role modeling. Girls can benefit from the encouragement and leadership of a coach, who can serve as an important role model and trusted confidante for them as they manoeuvre the difficult period of adolescence.

Academic Success. *It is recognised that there is a strong connection between participation in sport with academic success.* Girls who participate in sports tend to be more focused, disciplined in their studies and successful in school.

Workplace Skills. Sport contributes to development of a work ethic, organisation and time management skills, fund raising capacity, and positive character traits, such as accepting others' personality flaws and learning to work towards common goals. Sport also gives practice in developing positive competition between supporters.

Community Development Participation in sports is also intrinsically linked to community development initiatives. The values which sport enshrines - teamwork, inclusion, and personal achievement - build a strong foundation for personal and community growth.

Economic Development. In terms of economic growth, creation of sports teams can provide jobs as athletes, coaches, managers, and administrative staff; the worldwide trade in sporting goods can provide opportunities for product exports; and the revenue brought in by hosting major sporting events can be used to support economic growth in other areas.

Conclusion

With self-confidence, leadership and teamwork skills, girls are better equipped to challenge societal norms which continue to oppress women and relegate them to being second-class citizens. Though discrimination persists around the world, and acts as a deterrent to girl's participation in sport, the value of challenging these norms has become increasingly recognized, by international actors, government bodies, and communities themselves. The governments have to use sports to promote education, health, development and peace. UNESCO and UNDP have both recognized the value of sport as a tool of development, and have supported projects to use sport as a means of empowerment and development. But the real testimony comes from girls and women themselves. With each woman who excels in sport, barriers are broken, and a new generation of girls is able to benefit from participation in sports in a way that their mothers and grandmothers could not. Taking inspiration from the determination and dedication of female athletes from around the world, the next generation of girls can be inspired to participate in sports. In the process, these girls are challenging the barriers which exist in their societies, refuting gender stereotypes, and changing cultural norms, proving that women can excel in all manner of activities if only given the opportunity.

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A Comparatve Study Of Achievement Motivation Among Boxers And Cricketers of Osmania University

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Introduction: Achievement Motivation defined as the need to perform well or the striving the success as the need to perform well or the striving for success and evidenced by persistence and effort to achieve high performance in sports. Motivation is based on your emotions and achievement related goals.Achievement Motivation is the desire to excel at task.The purpose of the study is to find out the level of achievement motivation among Individual Game Sports Person and Team Game Sports Persons.Sport Psychology is the scientific study of people and their behaviors in sport. The role of a sport psychologist is to recognize how participation in sport exercise and physical activity enhances a persons development.

Beginning, in the 1970, Sport psychology became a part of the curriculum on university campuses. Today, sport and exercise psychologists have begun to research and provide information in the ways that psychological well being and vigorous physical activity are related. Modern day sports are very demanding . It requires for the sportsmen and athletes a like to perform to the very best of their abilities and beyond. Individual sport activities such as wrestling and gymnastics, have shown to elicit higher anxiety levels than competitive team sport activities such as soft ball and basket ball.
Achievement Motivation defined as the need to perform well or the striving for success and evidenced by persistence and effort in the face of difficulties. Achievement Motivation is regarded as central human motivation.Achievement Motivation form to be the basic for good life. People who are oriented towards achievement in general, enjoy life and feel in control, being motivated keeps people dynamic and gives them self respect. They set moderally difficult but easily achievable targets, which help them, achieve their objectives. They do not set up extremely difficult or extreme easy targets by motivated people prefer to work on a problem rather than leaving the outcome to chance. It is also seen that achievement motivated sports persons seem to be more concerned with their personal achievement rather the rewards of success.

Boxing (pugilism, prize fighting, the sweet science or in Greek pygmachia) is a martial art and combat sport in which two people engage in a contest of strength, reflexes, and endurance by throwing punches at an opponent with gloved hands.

Cricket is a bat-and-ball game played between two teams of 11 players on a roughly circular field, at the centre of which is a rectangular 22-yard long pitch. Each team takes it in turn to bat, in which they attempt to accumulate as many runs as possible, while the other team fields, attempting to prevent the batting team scoring runs.

Statement Of Problem: To find out the Achievement Motivation among Boxers and Cricketers of Osmania University.

Sample: For the present study 30 Male Boxers 30 Male Cricketers of Osmania University those who have participate in the O.U.Inter College Tournaments during the year 2012-13 and Inter University Coaching Camp of Cricket of Osmania University.
Tool: TheStandardized Dr.B.N.Mukharji Scale were used for the study.

Results And Discussion:
The Questionnaire were administered in small groups during the Osmania University Inter College Boxing Championahips for the year 2012-13 and Osmania University Cricket Coaching Camp.

The results Shows that the Boxers are more Achievement than Cricketers. Individual Performance sports like Athletics, Swimming,boxing, Cycling, Weight Lifting etc must have more achievement motivation to excel in sports. The Decision must be made by Individual sports persons is final for his performance. Whereas in Team Game there will be group effort among all players and their achievement motivation differs from each sports persons to sports persons.

Conclusions And Recomendations:

1.It is concluded that Boxers are having more Achievement Motivation because they set goals and aims to give level best performance to win the Competition, where as the Cricketers depend upon their group to give the high level of performance.

2.It is recommended that achievement motivation is compulsory for all sports persons to achieve high excellence in sports.

3.The Coaches must prepare all the sports persons with high level of motivation to excel in sports and games.

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Effect Of Systematic Hockey Academy Training Program On Morphological Parameters Of Rdt Hockey Academy Players

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Introduction

Physical structure is an important factor that contributes to success in sporting activities. Physique is a structure upon which function of the body depends. Like function, the structure responds to systematic training by adaptation. It has been observed that anthropometric measurements changed over the course of a season. Many of these anthropometric measures were used to estimate somatotype. Somatotype is an overall description of physique, a continuum from leanness and linearity to roundness and heaviness. Morphological traits of athletes achieving highest results in particular sport discipline, create a specific “somatic model” for that discipline. Identification of specific characteristics of physique that may contribute to success in field hockey has been a subject of high interest for sport scientists and coaches.

It is very important as a coach of young players to be aware of the players’ development stage and understand how the youth players can be trained not to impair their development (Bangsbo, 1994). Children are not small adults and should definitely not to be trained in the same way as adults (Bangsbo, 1994). The training process can solve motor and functional ability tasks simultaneously during the period of training. The maintenance of fitness during a season is a key target for every team (Koutedakis, 1995) but this is a complex process reflecting the diverse physical demands of the game. The purpose of this study was to assess the changes on selected morphological parameters of RDT hockey academy players with a yearlong adaptation to supervised systematic training in the academy.

Methods

Subjects

The subjects considered in the present study were twenty-two male hockey players from the RDT Hockey Academy, Anantapur, Andhra Pradesh, during the period 2008 – 2010. All the players had been part of the team for a minimum of 2 years. In this study the written informed consent were sought from the players to participate in this study, and they provided the same.

Testing procedure

The testing of selected criterion variables took place at the beginning of competitive phases of training during two periodized training year, with a span of one-year between initial and final data collection. The study was confined to the criterion variables namely: endomorph, mesomorph and ectomorph.

Statistical analyses

Descriptive statistics were calculated for all variables. A paired *t* test was utilized to determine significant differences for each variable between the testing years. Significance level was set at $P \leq 0.05$. All statistical analyses were conducted using SPSS 11.5 version.

Results

The RDT academy hockey player’s endomorph, mesomorph and ectomorph were assessed and the results of the statistical analysis are presented in table 1.

Table 1
Paired Samples T test on Selected Morphological Parameters

Variables	Testing Years	Mean	Standard deviation	Std. Error Mean	Paired Differences		*t*	Sig.
					Mean	Std. Deviation		
Endomorph	2008 -09	1.7800	.629	.134	.438	.531	3.868	.001
	2009 -10	1.3418	.274	.058				
Mesomorph	2008 -09	3.0441	.662	.141	.479	.438	5.133	.000
	2009 -10	3.5236	.626	.133				
Ectomorph	2008 -09	4.8959	.845	.180	.479	.605	3.713	.001
	2009 -10	4.4168	.658	.140				

The above tableexhibits the existence of significant difference between testing years for endomorph (*t = 3.868*, p = 0.001), mesomorph (*t = 5.133*, p = 0.000), and ectomorph (*t = 3.713*, p = 0.001). This implies that systematic hockey academy training program had a statistically significant influence on selected morphological parameters of RDT hockey academy players.

Discussion

The components of somatotype certainly play an important role in physical activity and vice versa. Many studies have reported that the somatotype of players alter in relation to different level of performance, and systematic training modalities in particular. This study reveals a statistically significant increase on mesomorph in RDT academy hockey players with a yearlong adaptation to supervised systematic training in the academy. And a corresponding decrease on endomorph and ectomorph were noted. This finding upholds the views of some (Carter & Heath, 1990; Tanner, 1964) that competitor'smorphological traits were developed in the course of specific training.

Conclusion

It shows that morphological traits of the field hockey players may adapt with systematic training and monitoring of the changes in morphological traits is essential among youngsters, and it helps the coaches to identify the ideal body build of hockey players and sets a platform for selection of players for training and competition.

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Use of Massage in Sports for enhancing the Performance

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Introduction:

A sports massage focuses on enhancing circulation, increasing tissue elasticity and reducing muscle tension. Sports massage is also used to help relieve tight muscles. Muscle tightness can limit flexibility, increase pain and cause future injuries. Sports massage helps release muscle tightness.Massage may be used in four distinct categories to help sportspeople. Although all the basicmassage manipulations may be used, certain considerations and adaptations must be made. Itis important that athletes and their trainers are aware of these differences and appreciate theireffects.

Sports massage is designed to help athletes before, during and after training. It is useful for anyone who exercises to increase flexibility, prevent injuries and help with healing after a sports injury and for gving the best results.Sports massage is specifically tailored to different sports and sporting injuries. It is not a relaxing form of massage and can often be quite strenuous. It works by stretching tight muscles, stimulating inactive muscles and improving the condition of the soft tissueThe aim of sports massage is to reduce the stress and tension that can build up in the soft tissues of the body during exercise. This form of massage is used to:

- increase motor abilities
- improve performance
- reduce the chance of injury
- reduce recovery time after an injury

Massage may be given in the following instances:

- Before an event or performance (pre-event massage)
- After an event or performance (post-event massage)
- As part of the training programme (training massage)
- As a rehabilitation treatment (treatment massage).

Discussion:

Massage may improve skin and muscle temperature, localised blood flow, and the release of serotonin, though these effects may be small and short-lived. On the other hand, massage may not affect blood lactate removal or reduce cortisol concentrations.Massage may reduce passive muscle stiffness and increase joint range of motion. Though there is no evidence regarding its effects on active muscle stiffness

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Massage may increase parasympathetic modulation and decrease neuromuscular excitability. Massage may reduce the perceptions of pain by promoting serotonin and dopamineconcentrations, but realistically its effects on pain are far from understood.Massage may reduce anxiety and increase the state of relaxation, potentially due to its influence on parasympathetic activity.Massage may have little, to no, effect on peripheral neutrophil concentrations. However, it may affect immunoglobulin A and lymphocyte concentrations, but the amount of evidence is scarce.Most research on massage is conducted within nursing, with very level performed in athletic populations.

Conclusions:

Massage helps for pain relief, reduced the recovery time after training, increase the energy and capacity to perform well, improve mobililty, makes muscles relax, improve the blood flow, reduced inflammation, enhance sports performance, improve mood, relieve from stress, makes the immune system strong, better sleep etc.

Recommendations:

The current scarcity in research on the effects of post-exercise massage on recovery means regulations on accusations should be enforced/tightened until further knowledge is obtained.The effects of post-exercise massage on recovery are still significantly unknown.Sports massage helps break down scar tissue and promote the formation of new healthy tissues. It also stretches and strengthens your muscles, dilates the blood vessels, and invigorates the body. Additionally, this form of therapy increases endorphin levels in the brain, which helps lift your mood and reduces pain.

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Tips to overcome Sports injuries in Sports and Games

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Introduction:

Sports injuries are injuries that occur when engaging in sports or exercise. Sports injuries can occur due to overtraining, lack of conditioning, and improper form or technique, during the sports event. Physical exercise is an important part of maintaining overall health. However, certain precautions should be taken to minimize the risk of sports injuries. Using the correct equipment and maintaining equipment can help prevent sports injuries. Wearing the recommended protective gear and sports shoes can help shield the body against injury. Resting between workouts gives the body time to rest and repair. Starting activity slowly and gradually increasing strength, flexibility, and endurance gives muscles, bones, and other tissues the opportunity to adapt to more difficult workouts, minimizing the risk of injury. Finally, listening to the body and backing off at the first signs of pain, discomfort, stress, or overheating will help reduce the risk of sports injuries.

Engaging in Sports Activities has numerous health benefits but also carries the risk of Injury. At Every Age Sports Persons sustain a wide variety of soft tissue, bone, ligament, tendon and nerve injuries caused by direct trauma or repetitive stress. Different sports are associated with different patters and types of injuries, whereas age, gender and type of activity influence the prevalence of injuries. Sports trauma commonly affects joints of the extremities i.e.knee,ankle, hip, shoulder, elbow, wrist and spine. The sports injuries that occur in competition or practice has loss of time for participation in Sport.

According to the TRIPP model (Finch, 2006), the first step in injury research is to understand the extend of the problem. The prevalence and prevalence proportion of sport injuries has been widely investigated across sports.

Major Injuries in Sports.

1. Basket Ball – Ankle Sprain
2. Lawn Tennis – Tennis Elbow
3. Badminton – Knee injuries
4. Football – ACL injuries
5. Jumpers Knee – Volley ball

6. Shoulder dislocation – Boxing

7. Sprints – Hamstring

8. Middle distance running – Hip and back Pain

9. High Jump – Shin Splints

10. Long Jumpers – ankle Sprain

Discussion

The following are the Tips to over come injuries in Sports and games.

1. Warming up
2. Correct Foot Wear
3. Correct Sports dress
4. Proper Rest
5. Good diet
6. Avoid Dehydration take plenty of liquids
7. Diet as per the event
8. Correct technique
9. Proper use of equipment
10. Optimum Training Load

Recommendations

Proper Use the correct gear: this should be right for the sport and fit properly, for instance pads for neck, shoulders, elbows, chest, knees, and shins, as well as helmets, mouthpieces, face guards, protective cups, and/or eyewear in cricket, boxing, foofball, taekwondo sport etcBuild motor fitnessof sports persons by doing conditioning exercises before games and during practice to strengthen the muscles and joints you use during practice and events.Increase flexibility: by stretching before and after match and practice.coaches and trainers should reinforce this during the playing season correct technique.

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Effect of Yoga exercises for development of Muscular endurance among RCPE Women Students, Prodattur

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Introduction :

Yoga has become a Important part of Physical Education and it is getting its due weight age at various levels such as Schools, Colleges, Clubs and Senior Citizens are also doing yogic practices to delay the ageing process and to avoid various medical ailments. Studies on Padmasana, Siddhasana, Pachimottanasana, Bhujangasana, Dhanurasana, Kurmasana etc., have revealed some degree of specificity in terms of Cardio-respiratory adjustments. Various studies have shown that regular practice of asanas and pranayama can help aliments like arthritis, arteriosclerosis, chronic fatigue, astama, varicose veins, heart conditions, temperature, heart beat and blood pressure. practice yoga to avoid the disastrous consequences of the sedentary urban lifestyle. A set of yogic postures combined with pranayama, if practiced daily, can protect from modern lifestyle diseases.

- Surya Namaskar is not only a great warm up exercise but it also helps to shed those extra pounds.
- Cobra Pose strengthens the upper back and helps correct the bad posture caused by long desk jobs.
- Eye, neck, shoulder, wrist and ankle rotations help counter stiffness whilst sitting at a desk.
- Shalabhasana relieves lower back pain that is caused by hours of perching on a chair.
- Downward Dog Pose and Sarvangasana help to reverse the blood flow in your body, thereby preventing baldness and premature graying.
- Gomukhasana prevents cervical pain, which is becoming increasingly common. This asana can be practiced while seated on a chair.

Material and Methods

For this purpose 20 women students those who are studying in Rayalseema College of Physical Education, Proddatur as subjects between the age group of 19 to 23 years. For this study two groups were assigned they are Experimental group of 10 subjects and Control group of 10 subject.. Six weeks of Yogasanas training were given to the experimental group. The control group was not allowed to participate in any of the training programs, except their routine physical education classes. Measurements for the variables were taken at the beginning (pre - test) and at the end of the experimental period, after six weeks (post - test) the data were collected for all the variables from both control and experimental groups, for five days. During this period the subject were not allowed to participate in any training. Muscular endurance was by administering bent-knee sit-ups test.

Results and Discussion

Table 1: Comparison of bent knee situps test between experimental and control groups in pre and post-test

Variable	Group	Test	Mean	SD	SE	MD	Ot	df	t
Muscular Endurance	Experimental	Pre test	34.25	4.57	1.53	4.00	2.74*	18	2.03
		Post test	37.18	4.57					
	Control	Pre Test	33.34	4.79	1.84	0.40	0.21	18	2.03
		Post Test	33.68	5.41					

The experimental group Mean in Pre Test is 34.25 and Post Test mean is 37.18 there is a improvement of 3.07 and control group Mean in Pre Test is 33.34 and Post Test mean is 33.68 there is a slight improvement due to general training.

Conclusion:

Due to Yoga Practice there is a improvement by experimental group in muscular endurance. Yoga exercises aare useful for promotion of skill related fitness.

Recommendations:

The Coaches must include Yoga training Programme to enhance the Performance of sports persons.

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