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Effect Of Isolated And Combined Treadmill And Yogic Exercises On Leg Strength Muscular Endurance And Flexibility Among Middle Aged Men

Mr. R. Narayanasamy* Dr. V. Jayanthi And Dr. S. Chidambara Raja*****

ABSTRACT

The purpose of the present study was to find out the effect of isolated and combined treadmill and yogic exercises on leg strength, muscular endurance and flexibility. For this purpose, forty sedentary middle aged men with age group of 35 to 40 years, around Annamalainagar, Chidambaram, Tamilnadu, were selected as subjects. They were divided into four equal groups, each group consisted of ten subjects, in which group – I underwent treadmill exercise (walking), group – II underwent yogic exercises, group – III underwent combined treadmill and yogic exercises and group – IV acted as control group. The training period for this study was five days in a week for twelve weeks. Prior to and after the training period, the subjects were tested for leg strength, muscular endurance and flexibility. The selected criterion variables, such as, leg strength, muscular endurance and flexibility, were tested by using and administering, dynamometer, sit-ups and sit and reach test. Analysis of Covariance (ANCOVA) was applied as statistical tool. Whenever the posttest mean found significant, the Scheffé S was applied as post-hoc test. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. It was concluded from the results of the study that the training groups have improved leg strength, muscular endurance and flexibility.

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INTRODUCTION

Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete's physiological potential and to develop biomotor abilities to the highest standards (Tudor O. Bompa, 1999). The treadmill is used to improve the fitness of the heart and lungs. Treadmills are often used in a medical setting, in conjunction with electrocardiograms, to detect disease of the cardiovascular system. (Sha Buckines, 10-06-2012)The Sanskrit word comes from the root 'Yug' which means to unite and it represents both a process and a state of unity. The state of yoga is the culmination of syntropy: it is a state devoid of the limitations of time and space, a state which transcends matter and energy and which cannot be qualified by any attribute. (Yogacharya Janakiraman and Carolina Rosso Cicogna, 1978)

Leg strength is possibly the most neglected and undervalued component of physical fitness. Lack of leg strength 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. (Rex Hazeldine, 1985).

The endurance required resisting fatigue due to loading at sub maximum and maximum intensity (approximately 85 – 100% maximum intensity) and predominantly aerobic production of energy. It is essential in sports demanding this types of endurance that speed is not reduced due to fatigue or innovation inhibition.

Flexibility which is considered as range of motion around a joint is the base for any movement. To pick up a small object, to sit, stand and to plant a nail into the well one should have flexibility though other factors like strength are also essential. (Donald K. Mathews, 1978)

Methods

The purpose of the present study was to find out the effect of isolated and combined treadmill and yogic exercises on leg strength, muscular endurance and flexibility. To achieve the purpose, forty sedentary middle aged male with age group of 35 to 40 years, around Annamalainagar, Chidambaram, Tamilnadu, were selected as subjects. They were divided into four equal groups, each group consisted of ten subjects, in which group – I underwent treadmill exercise (walking), group – II underwent yogic exercises, group – III underwent combined treadmill and yogic exercises and group – IV acted as control group. The training period for this study was five days in a week for twelve weeks. For every training programme there would be a change in various structure and systems in human body. So, the researcher consulted with the experts then selected the following variables as criterion variables: 1. Leg strength, 2. muscular endurance and 3. flexibility. The selected criterion variables such as, leg strength, muscular endurance and flexibility, were tested by using and administering, dynamometer, sit-ups test and sit and reach test.

Analysis of the Data

Analysis of covariance was used to determine the differences, if any, among the adjusted post test means on selected criterion variables separately. Whenever the 'F' ratio for adjusted posttest mean was found to be significant, the Scheffé S test was applied as post-hoc test. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

Table – I

Analysis of Covariance and 'F' ratio for Leg strength, Muscular Endurance and Flexibility of Isolated Combined Treadmill and Yogic practice Groups and Control Group

Variable Name	Group Name	Treadmill Exercise Group	Yogic Exercise Group	Combined Treadmill and Yogic Exercise Group	Control Group	'F' Ratio
Leg strength (in Kgs)	Pre-test Mean \pm S.D	44.5 \pm 2.593	45.3 \pm 1.581	43.2 \pm 1.932	42.7 \pm 1.418	1.539
	Post-test Mean \pm S.D.	46.9 \pm 3.071	45.0 \pm 1.826	44.7 \pm 2.214	42.3 \pm 1.947	6.642*
	Adj. Post-test Mean \pm S.D.	45.766	44.972	45.004	43.157	13.857*
Muscular Endurance (in Nos.)	Pre-test Mean \pm S.D	20.4 \pm 1.7413	19.8 \pm 2.098	19.5 \pm 1.958	20.7 \pm 1.494	0.896
	Post-test Mean \pm S.D.	23.0 \pm 2.055	22.2 \pm 1.932	24.2 \pm 1.619	21.0 \pm 1.247	5.978*
	Adj. Post-test Mean \pm S.D.	22.763	22.437	24.675	20.525	28.427*
Flexibility (in Cms)	Pre-test Mean \pm S.D	11.7 \pm 1.252	12.3 \pm 1.636	12.0 \pm 1.633	12.1 \pm 1.197	0.30
	Post-test Mean \pm S.D.	13.9 \pm 0.994	14.8 \pm 1.418	14.7 \pm 1.418	12.3 \pm 1.111	5.075*
	Adj. Post-test Mean \pm S.D.	14.168	14.573	14.721	12.238	10.61*

* Significant at .05 level of confidence. (The table value required for significance at .05 level with df 3 and 37 and 3 and 36 are 2.85 and 3.87 respectively).

Table - II

Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Leg Strength, Muscular Endurance and Flexibility

Adjusted Post-test Mean of Leg Strength					
Treadmill Walking Group	Yogic Practice Group	Combined Treadmill Walking and Yogic Practice Group	Control Group	Mean Difference	Confidence Interval at 0.05 level
45.766	44.972			0.794	1.17957
45.766		45.004		0.762	1.17957
45.766			43.157	2.609*	1.17957
	44.972	45.004		0.033	1.17957
	44.972		43.157	1.815*	1.17957
		45.004	43.157	1.847*	1.17957
Adjusted Post-test Mean of Muscular Endurance					
22.763	22.437			0.326	1.28841
22.736		24.675		1.939*	1.28841
22.736			20.525	2.211*	1.28841
	22.437	24.675		2.238*	1.28841
	22.437		20.525	1.912*	1.28841
		24.675	20.525	4.15*	1.28841
Adjusted Post-test Mean of Flexibility					
14.168	14.573			0.405	1.46303
14.167		14.721		0.554	1.46303
14.167			12.238	1.929*	1.46303
	14.573	14.721		0.148	1.46303
	14.573		12.238	2.335*	1.46303
		14.721	12.238	2.483*	1.46303

* Significant at .05 level of Confidence.

Results

Table – I showed that there was a significant difference among treadmill exercise group, yoga exercise group, combined treadmill and yoga exercise group and control group on leg strength, muscular endurance and flexibility.

Table – II shows that the Scheffé S test on leg strength for the difference between adjusted post-test mean of between treadmill walking group and control group (2.609), yogic practice group and control group (1.815) and combination of treadmill walking and yogic practice group and control group (1.847), which were significant at .05 level of confidence.

Table – II also shows that the Scheffé S test on muscular endurance for the difference between adjusted post-test mean difference of treadmill walking group and combined treadmill walking and yogic practice group, treadmill walking and control group, yogic practice group and combined treadmill walking and yogic practice group, yogic practice and control group and combination of treadmill walking and yogic practice group and control group were 1.939, 2.211, 2.238, 1.912 and 4.15 respectively, which was significant at .05 level of confidence.

Table – II shows that the Scheffé S test on flexibility for the difference between adjusted post-test mean difference of treadmill walking group and control group (1.929), yogic practice group and control group (2.335) and combination of treadmill walking and yogic practice group and control group (2.483), which were significant at .05 level of confidence.

The result of the study also shown that there was no significant difference between the training groups on selected criterion variables such as, leg strength, and flexibility after the training programme.

Conclusions

1. It was concluded from the results of the study, the leg strength, muscular endurance and flexibility has improved significantly after the respective training programme.
2. When compared with the control group, the training groups has significantly improved in selected criterion variables, such as, leg strength, muscular endurance and flexibility.
3. It was also concluded from the results of the study, that there was a significant difference between the training groups on muscular endurance, i.e. between yogic exercise group and combined treadmill walking and yoga exercise group and treadmill exercise group and combined treadmill walking and yoga exercise group. In which, the combined training group have significantly improved the muscular endurance than the other experimental groups.

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Situating Women In Sports “A Conceptual View”

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Preface: Women in Sport' has been a topic virtually ignored by most scholars and thus female sport participation has been a relatively undeveloped area of research. Sex role, stereotyping, male research bias and the reward structure of society have contributed to this neglect. Currently, sport for women represents a fast growing changing element in Indian culture, and recent trends have sparked a need for knowledge about the female sport participation.

In our Pride India, percentage ratio of men and women is 52.48 and percentage ratio for the literacy among the men and women is 70 and 48, respectively. Woman play vital role in development of India. Hence she should get the representation in all area like education, employment and sports. But even after the 62 years of the independence, women are still deprived in this male dominant culture and her participation is very negligible in sports. Even considering the ratio of men and women at Olympic it is 58:42. Also the numbers of games which are dedicated to men is more than the games that has been played by women. Even at local level like school level or intercollegiate level, women's participation in sports is very less as compare to men. The reasons for this less participation could be (1) less % of literacy, (2) male dominant culture, (3) family and social level abstraction, (4) less availability of women coach, (5) no independent games facilities for women, (6) child marriage, (7) low health conscience, (8) more emphasis on study, (9) cut through competition in education, (10) more emphasis on tuition classes, (11) less importance to sports at society level, (12) lack of government plans for sports person and (13) lack of incentive marks

Women, who adds to the beginning of life playing a varied role in complex Indian society in all aspects of life. Despite facing the killing social stigma of female feticide in Indian society, women geared up and stepped out to earn respect, status and valuable place in society. This unique creature of almighty celebrates 21st century as a women empowerment era by proving their mettle in almost every field of area. Their caliber is recognized from countryside's field to the height of moon. Although the women population is lesser as compare to their male counterpart, noted down by Indian sex ratio which is 1000:933 (933 women per thousand men) but their deeds are multiple that overwhelm their paucity. They excelled in all direction into every field at both national and international levels such as polity and economy, organization and administration, art and drama, civil services to defense services and so on. Similarly contribution of women in the vast field of sports can't be ignored. They toiled hard to attain the peak and put forward their supremacy by fetching bagful of medals at national and international arena from time to time. But unfortunately they are not highlighted at fullest as still the birth as women piling up obstacles in their respect and their self esteem. The aim of present paper is to conceptualize the poor status of women sports in society and to find out the causes of the paralytic participation of women in sports as compare to men in context to Indian society and social values. By the enlightenment of this paper, after knowing the causes of low participation of Indian women in sports, new policies can be formulated for them in order to encourage their participation from grass root level. This conceptual idea will create a awareness among mass to be liberal for female participation in sports, thus the rise in women participation can be boosted up.

Historical glimpses of the status of the women participation in sports.

There has been a particular disguised and compressed living style pattern for women in Indian society since the time of iniquity. Historically speaking women and women sports both have enjoyed a low status. In classical Athens the status of the women was low and their participatory was similarly low. As it is evident participated in sports in ancient Greece, yet they were not permitted to participate in the Olympics and even to witness the Olympic Games. It was prohibited for the women to enter the stadium. Those who broke the rule were severely punished. According to Simri (1970) in 1896 when Olympic games were re established even Baron Pierre de Coubertin, founder of the modern Olympic games did not permit the women to participate in Olympic games. He fought tooth and nail to keep women out of Olympic competition ultimately he failed women were permitted to participate in 1900 Paris Olympic games. But they were very few in numbers. Women were not permitted to expose any part of the body till the first decade of 20th century in Europe and America. Revealing even the ankle was considered indecent exposure. When exposed in the presence of men. However women participation in Olympic games went on increasing from Olympic to Olympic but at slow rate compared to male and the participation ratio between both the sexes has been low in Olympic games. Contemporarily in India the condition of women sports were at low level. Because of the colonial Kingdom, the Indian women were confined up to the wall of home. Since that time women have been dominating to run along male activities. Even the Olympic evidence reveals the truth that the participation of women has been lesser as compared to male participation.

Causes of low participation of women in sports

As it is evident by the Olympic history of the world that the participative capacity of Indian women has been low and but gradually started increasing at low ratio in comparison to their male counterpart. Therefore, There has been manifold causes, social stigmas and mandatory obstacles for them to come out and spread in the field of games and sports. Such concrete hurdles are:

1) **Less sex ratio**: India is the vast leading populated country in the world but there is variation in the sex ratio of the country. That is an every 1000 males there is only 933 females. So initially this is the root cause that due to less female population their participation in sports cannot be beyond males as they are less in number.

2) **Female Feticides** : Now a day in India female feticide is the common social stigma especially in the northern region. Which is considered as nursery of the Sports. So due to the affects of this female killing act we are losing numerous Olympians and elite athletes every day. Thus automatically we are losing female medals by losing them.

3) **Social stigma with regard to sports**: After lot of the awareness of the sports still the Indian Society is buried in their backward rituals and dominated girls females upto the boundary of kitchen and home. People feels girls would lose their physical values by having their body in sports. That may lead to further physiological problems.

The comfortable wearing of the sports sometimes becomes unacceptable to the urban society, as far as countryside are concerned of wearing. They are entirely against it. And trying to wrap the girl in their old tradition. They take sports as activity which ruin their aesthetic value.

4) **Social bondage** : It is perceived by much of the families that the sports as professions not suited for female, because much of the outdoors due to the existence of joint, conservative and nuclear families.

5) **less lucrative**: People think participation in sports is not profitable and fit for carrier opportunities because there are many personal expenditures incurred sports goods, diet, training and coaching etc. But it has been seen that Despite performing well Indian women could not get satisfactory rewards. Thus less return in case of winning and zero output in case of failure, they get low profile jobs in civil departments and defence services after proving their potential and mettle at fullest.

6) **Sexual harassments**: women also withdraw them back from sports because of molestation and sexual harassment by the sports mates and authorities including coaches, trainers and physicians etc. If they opposes the concern then her carrier is limited or even shattered.

7) **Not royal and recognizable for women:** after high level performance at commonwealth games, Asian games and Olympic games still the women do not get eminent reorganization, royalty, and respect as compare to their male counterpart.

e.g. as Vijender is much more famous than M.C. Marykom. There is the difference between the status are reorganization of the boxers.

8) **Sports as man's heritage in India:** since the time of participation in international arena in India in Olympic Games (1900 Paris Olympic) there were no participation of women had been found in records. Therefore it shows there has been less participation of female as compare to males .but still being the number two populated country in the world the condition of the female participation is same as it was the in the past so reveals the domination of the male legacy is being proven.

9) **Participation of poor class and lower class:** almost the females , that take part in sports are less in numbers and this very less participation of female population belongs to poor families or lower class .they put their dedication ,work hard and gone beyond the barrier of society to gain respect, name and fame. but unfortunately due to lack of technical coaching, training and lack of other sources and facilities their performance stagnate up to a certain level and then society criticized them. Than other class of the society perceive that sports for female is just a wastage of time and it is for lower class people only. This breaks the Up rise population in the field of sports.

10) **Disguised exploitation:** physical and mental exploitation are being faced by the women for not giving cooperation to the authorities. Exploitation also give birth to biasness in selection procedure and favourism occurs, which lays psychological set back to the athletes that lead to numerous problems and performance deteriorates and finialy female herself quit and end up her sports carrier .

11) **Unsuccessful despite being successful :** In India dignity of sports women are not being treated as equal to dignity of sports men, despite performing outstanding in international arena .this leads to frustration and resultant losing interest in games .

e.g. Jwala Gutta of badminton a prominent player after giving out class performance in so many international championships now days is being criticized by the badminton federation for her personal life and stipulated decision for her playing.

12) **Inadequate availability of the basic infrastructure in rural area:** In agriculture based country in India ,where 70% of the population are settled down in rural area that have much talent and potential but It has not been exploited due to the non availability of the coaches ,gym, stadium and lacking in sports awareness that tend to reduce female participation in sports events.

13) **Misconceptions:** it has been a wrong and vague notion among the masses that sports deteriorates academic performance of the students by creating physical tiresome, rather sports Sports increases the study efficiency and capacity by making body fit and fine and break the fatigued monotony of study. so instead of living or avoiding sports female should join at least some sort of games and sports for physical and professional purposes.

Conclusion: though the women now have been started taking part in sports but it is not at par with male , and there are still many obstacles in their path towards sports ground created by the society. by this effect they are unable to show their potential in sports arena .very less of them reaches up to national and international level and rest of the talent are not being groomed well rather wasted in time money and future

Implication

1) This conceptual idea of situating women in sports can be used for further historical based research work.

2) With the awareness of this paper the female participation in sports can be increased.

3) There would be impact on society regarding female participation in sports.

4) Various workshops should be organized pertaining to female participation in sports in deferent rural and urban area that will spread enlightenment and increase female participation in sports.

Key words: women, sports, society, social value, social awareness, social stigma, male participation etc.

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Comparision Of Competitive Anxiety Level Of Tribal Female Of Tribal Kabaddi Players At Different Levels Of Achievement

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ABSTRACT: The purpose of present study was to compare sorts competitive anxiety level of tribal female Kabaddi players. 60 tribal female players were selected from North Gujarat University, Patan and affiliated colleges by simple random sampling. The sample consisted of 30 tribal female inter collegiate and 30 tribal female inter university Kabaddi players. The psychological variable competitive anxiety was assessed by administrating sports competitive anxiety test questionnaire. The data was computed and analyzed using descriptive statistics and 't' test in order to compare the significant difference between inter collegiate and inter university tribal female Kabaddi players. The level of significance was set at 0.05. The result indicated that there were no significant differences among Kabaddi players as the obtained 't' value (0.72) was less than than tabulated 't' value (2.00).

KEY WORDS: Competitive Anxiety, Tribal Player Achievement Level.

INTRODUCTION: Now a day interest encompasses both some degree of activation and an unpleasant emotional state. Anxiety is recognized the main factor that affects perception in sports. It is a negative emotion that affects perception in sports competitions and this lead too majority of athletes to consider anxiety as debilitating toward performances, which may result in decrease in a sport. The purpose of this study was to compare the sports competitive anxiety of inter-collegiate and inter-university tribal female Kabaddi players. It was hypothesized that there would be no significant difference in competitive anxiety level between the selected Kabaddi players at different levels of achievement.

METHODOLOGY: By applying simple random sampling, a total 60 tribal female Kabaddi players (30 inter collegiate and 30 inter university player) were selected from North Gujarat University, Patan and affiliated college situated in tribal districts of Mehasana. The age of the subjects ranged from 18 to 25 years and average 2 years training experience. The SCAT questionnaire developed by Rainer Martens was used.

RESULTS AND DISCUSSION: The statistical analysis of data pertaining to the study on two levels of inter collegiate and inter university players was computed by descriptive statistics and analyzed by applying 't' test. The level of significant was set at 0.05. The statistical analysis of cometitive anxiety of Kabaddi players at different levels of achievement has been presented in table-1. Table-1- Comparision of Means of Competitive Anxiety between Inter Collegiate and Inter University leel tribal female Kabaddi players.

Achievement level	Mean	SD.	M.D.	S.E.	't' ratio
Inter collegiate Kabaddi player	20.367	2.456	0.537	0.75	0,72*
Inter university Kabaddi player	19.83	3.307			

*Not significant at 0.05 level

tab t 0.05 (58) = 2.00

Table – 1 reveals that the calculated 't' value of 0.72 was less than the tabulated 't' value of 2.00. It means, there is no significant difference in the level of competitive anxiety between inter collegiate and inter universit tribal female Kabaddi players.

CONCLUSION: The result indicated that there was no significant difference in the study levels of tribal female Kabaddi players at different levels of achievement.

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Effect Of Parcourse Training And Interval Training On Leg Strength Cardio-Respiratory Endurance And Vital Capacity

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ABSTRACT

The purpose of the present study was to find out the effect of parcourse training and interval training on leg strength, cardio-respiratory endurance and vital capacity. For this purpose, forty five male students studying bachelor degree in the Department of Physical Education and Sports Sciences, Annamalai University with age group of 18 to 22 years, were selected as subjects. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent parcourse training, group – II underwent interval training and group – III acted as control which did not participate any special training, except their regular curricular activities. 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 leg strength, cardio-respiratory endurance and vital capacity. The selected criterion variables, such as, leg strength, cardio-respiratory endurance and vital capacity, were tested by using and administering, dynamometer, Cooper's 12 minutes run/walk test and wetspiromter. The Analysis of Covariance (ANCOVA) was applied as statistical tool. Whenever the post-test means found significant, the Scheffé S was applied as post-hoc test. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. It was concluded from the results of the study that the training groups have improved leg strength, cardio-respiratory endurance and vital capacity.

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INTRODUCTION

Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete's physiological potential and to develop biomotor abilities to the highest standards (Tudor O. Bompá, 1999). A new concept of circuit training developed in Europe has been adopted recently in the United States and Canada called 'parcourse'. It consists of a series of stations set up over a one to two and a half mile path, to provide a recreational exercise circuit for individuals of all ages and abilities. (William E. Prentice and Charles A. Bucher, 1988). Interval training is a type of physical training that involves bursts of high-intensity work interspersed with periods of low-intensity work. The high-intensity periods are typically at or close to near-maximum exertion, while the recovery periods may involve either complete rest or activity of lower intensity. Interval training can refer to organization of any cardiovascular workout (e.g. cycling, running, rowing, etc.), and is prominent in many sports' training. It is a technique particularly employed by runners, but athletes from several backgrounds have been known to use this type of training. The endurance required resisting fatigue due to loading at sub maximum and maximum intensity (approximately 85 – 100% maximum intensity) and predominantly aerobic production of energy. It is essential in sports demanding this types of endurance that speed is not reduced due to fatigue or innovation inhibition.

Vital capacity is the maximum amount of air a person can expel from the lungs after a maximum inspiration. It is equal to the inspiratory reserve volume plus the tidal volume plus the expiratory reserve volume. A person's vital capacity can be measured by a spirometer which can be a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. The unit that is used to determine this vital capacity is the millilitre (ml). A normal adult has a vital capacity between 3 and 5 liters.

Methods

The purpose of the present study was to find out the effect of par course training and interval training on leg strength, cardio-respiratory endurance and vital capacity. For this purpose, forty five male students studying bachelor degree in the Department of Physical Education and Sports Sciences, Annamalai University with age group of 18 to 22 years, were selected as subjects. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent par course training, group – II underwent interval training and group – III acted as control group. The training period for this study was three days in a week for twelve weeks.

For every training programme there would be a change in various structure and systems in human body. So, the researcher consulted with the experts, then selected the following variables as criterion variables: 1. leg strength, 2. cardio-respiratory endurance and 3. vital capacity. The selected criterion variables such as, leg strength, cardio-respiratory endurance and vital capacity, were tested by using and administering, dynamometer, Cooper's 12 minutes run/walk test and wetspirometer.

Analysis of the Data

Analysis of covariance was used to determine the differences, if any, among the adjusted post test means on selected criterion variables separately. Whenever the 'F' ratio for adjusted posttest mean was found to be significant, the Scheffé S test was applied as post-hoc test. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

Table – I

Analysis of Covariance and 'F' ratio for Leg strength, Cardio-respiratory Endurance and Vital Capacity of Par course Training and Interval Training Groups and Control Group

Variable Name	Group Name	Parcourse Training Group	Interval Training Group	Control Group	'F' Ratio
Leg Strength (in Kgs)	Pre-test Mean \pm S.D	69.53 \pm 4.565	67.93 \pm 1.932	69.13 \pm 5.222	0.388
	Post-test Mean \pm S.D.	72.60 \pm 5.962	69.20 \pm 5.647	68.07 \pm 5.092	2.683
	Adj. Post-test Mean \pm S.D.	71.903	70.176	67.788	35.274*
Cardio-respiratory endurance (in Mts.)	Pre-test Mean \pm S.D	2856 \pm 63.56	2844 \pm 37.95	2838.3 \pm 45.3	0.304
	Post-test Mean \pm S.D.	2892.7 \pm 63.5	2893.3 \pm 52.5	2838.7 \pm 50.3	4.755*
	Adj. Post-test Mean \pm S.D.	2885.725	2896.523	284242	9.11*
Vital Capacity (liters)	Pre-test Mean \pm S.D	4.5573 \pm 0.054	4.5453 \pm 0.04	4.574 \pm 0.039	1.619
	Post-test Mean \pm S.D.	4.5747 \pm 0.058	4.5653 \pm 0.04	4.5693 \pm 0.05	0.136
	Adj. Post-test Mean \pm S.D.	4.576	4.580	4.553	12.115*

* Significant at .05 level of confidence. (The table value required for significance at .05 level with df 2 and 42 and 2 and 41 are 2.21 and 3.22 respectively).

Table - II

Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Leg Strength, Cardio-respiratory endurance and Vital Capacity

Adjusted Post-test Mean on Leg Strength				
Parcourse Training Group	Interval Training Group	Control group	Mean Difference	Confidence interval at .05 level
71.903		67.788	4.115*	1.24839
71.903	70.176		1.727*	1.24839
	70.176	67.788	2.388*	1.24839
Adjusted Post-test Mean on Cardio-respiratory Endurance				
2885.725		2842.42	43.305*	34.013543
2885.725	2896.523		10.798	34.013543
	2896.523	2842.42	54.103*	34.013543
Adjusted Post-test Mean on Vital Capacity				
4.576		4.553	0.023*	0.014471
4.576	4.580		0.004	0.014471
	4.580	4.553	0.027*	0.014471

*Significant at .05 level of Confidence.

Results

Table – I showed that there was a significant difference among parcourse training group, interval training group and control group on leg strength, cardio-respiratory endurance and vital capacity. Table – II shows that the Scheffé S test on leg strength for the difference between adjusted post-test mean of between parcourse training group and control group (4.115), parcourse training group and interval training group (1.727) and interval training group and control group (2.388), which were significant at .05 level of confidence. Moreover, the parcourse training group was significantly increased the leg strength than the interval training group. Interval training group were better improvement than the control group. Table – II shows that the Scheffé S test on cardio-respiratory endurance for the difference between adjusted post-test mean difference of parcourse training group and control group (43.305), and interval training group and control group (54.103), which were significant at .05 level of confidence. Table – II shows that the Scheffé S test on vital capacity for the difference between adjusted post-test mean difference of parcourse training group and control group (0.023), and interval training group and control group (0.027), which were significant at .05 level of confidence. The result of the study also shown that there was a significant difference between the training groups on leg strength and there was no significant difference occurred between the training groups on cardio-respiratory endurance and vital capacity after the training programme.

Conclusions

It was concluded from the results of the study, the leg strength, cardio-respiratory endurance and vital capacity has improved significantly after the respective training programmes. When compared with the control group, the training groups has significantly improved in selected criterion variables, such as, leg strength, cardio-respiratory endurance and vital capacity.

There was a significant difference was found between the training groups on leg strength after the completion of twelve week training programme, in which parcourse training group have improved the leg strength than the interval training group.

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Comparison Of Personality Characteristics Of Table Tennis And Badminton Players

Devda Upendrasinh Devisinh

Abstract: The aim of present study was to compare the personality characteristics of Inter collegiate Table Tennis and Badminton player, with regard to neuroticism and extraversion. Twenty Table Tennis and Badminton players served as subjects who participated in inter college tournament. Eysenck personality inventory (E.P.I.) was administered to find out the personality characteristics of the Table Tennis and Badminton players, with regard to neuroticism and extraversion. 't' test was used to compare the significance difference between Table Tennis and Badminton players. t-ratio for extraversion and neuroticism were (3.75, p greater than 0.05) and (1.83, p less than 0.05) respectively indicating significant difference with respect to extraversion and no significant difference with respect to neuroticism between Table Tennis and Badminton players.

Introduction: Personality is the overall pattern of psychological characteristics that makes person a unique individual. It is well known fact that players, of one game differ from the players of other games in their personality traits. The purpose of the study was to find out personality characteristics between inter collegiate level Table Tennis and Badminton players, with regard to neuroticism and extraversion. The present study was delimited only two psychological variables as it was not horrible to study all the psychological factors which help the sportsman. The two variables which were selected for present study - extraversion - neuroticism.

Methodology: Twenty Table Tennis players and 20 Badminton players who participated in inter collegiate tournament conducted by North Gujarat University, Patan, were selected as subject for this present study. E.P.I. was administration to the Table Tennis and Badminton players. Instructions were given to the subject before filling the E.P.I.

Results and Discussion: The result of the present study in table 1 and table 2.

Table – 1: Means. S.D. and t-ratio of extraversion for Table Tennis and Badminton Players

Players	N	Means	S.D.	t-ratio
Table Tennis	20	27.95	2.3	3.75*
Badminton	20	24.80	3.06	

*Significant at 0.05 level

Table – 2: Means. S.D. and t-ratio of Neuroticism for Table Tennis and Badminton Players

Players	N	Means	S.D.	t-ratio
Table Tennis	20	21.4	5.26	1.83*
Badminton	20	23.9	3.08	

*Significant at 0.05 level

It is evident from table 1 there was significant difference found ($t = 3.75$, p is less than .5) between Table Tennis and Badminton Players with respect to extraversion. In table 2 no significant difference was found ($t = 1.83$, p is less than .5) between Table Tennis and Badminton Players with respect to neuroticism.

Conclusion: Statistically significant difference of personality characteristics with respect to neuroticism between Table Tennis and Badminton Players was found. Table Tennis players were found to have significant neurotic tendency as compare to Badminton players. Statistically significant difference of personality characteristics with respect to extroversion between Table Tennis and Badminton Players was found. Table Tennis players were found to have got more neurotic tendency as compare to Badminton players.

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Effect of Physical Education Programme on Physical Fitness Status of M.P.E. Students

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Abstract:

The present study was undertaken to evaluate the effect of physical education programme on physical fitness status of M.P.E. students. 24 male M.P.E. students, studying in the physical education department, Gujarat University, Ahmedabad, were included in the research design. Physical Education programme running in the institution was taken as a training programme. 'AAHPER' youth fitness test was chosen as criterion measure. Data was collected through pre and post test which was conducted in the month of July and December, 2011 respectively. To determine significance difference, t-test was applied. The result shows that there was no significant difference found between initial test means and final test means. Hence it is concluded that this physical education programme is not effective.

Key words: Physical fitness, Physical education programme, Training

Introduction:

The purpose of this investigation was to assess the effect of physical education programme on physical fitness status of M.P.E. students. It was hypothesized that there would be significant improvement in physical fitness status of M.P.E. students.

Methodology: The subjects for this study were 24 male M.P.E. students, studying in the physical education department, Gujarat University, Ahmedabad. All subjects were participating in the existing physical education programme as training programme. To find the 'AAHPER' youth test was used. The data was collected for each variable administering their respective tests. The tests were administered at play ground of Gujarat University. First of all in the month of July all the subjects performed the 'AAHPER' youth fitness test. Data of this test were taken as pre test. To ensure that the data was reliable each subject was given sufficient no. of trials of performing the respective test for each variable. Physical education programme of the institution which is regular feature of curriculum was taken as a training programme. Here morning session is started from 6.00.am to 8.00 am. During this session first of all students go for jog 4 rounds of the 400 meter track followed by stretching exercises. After exercise they go for particular game activity which is in the schedule. Evening session start from 4.30.pm to 6.30 pm. In this session student jog two round of the track then go for stretching exercises. Then rest of the time for game activity which is in the schedule. In the month of December post test were taken.

Results and Discussion: In order to determine the significance of difference between pre and post test mean for composite scores of 'AAHPER' youth fitness test. t- Test was applied. The result is given below.

Table-1-Significance of difference between the pre and post test means on composite scores of 'AAHPER' youth fitness test performance

Pre test means	Post test means	D.M.	S.E.	t-ratio
299.96	308.98	9.02	8.60	1.04*

Significant at .05 level tab t 0.05 (23) = 1.71

It is evident from the finding that physical education programmed of physical education department, Gujarat University, Ahmadabad does not show significant improvement on the physical fitness status of students of M.P.E. in the institution. No significant difference between pre and post means was found on composite scores of 'AAHPER' youth fitness test. It is evident from the findings that there is no significant difference between previous and post physical fitness status. There may be lot of cause of this findings, one of them is control over subjects was not adequate. Attendance of the students and breakdown in training could be the major reason. Another one, Physical education programme which is running here, is not carried out systematically and scientifically. Third one, this programme is not based on proper schedule as there is no distribution of days for development of motor components of physical fitness

Conclusion: It is evident by 't' value that there was no significant difference found between the initial test means and test means. Hence it is concluded that this physical education programme is not effective and not enough to improve the physical fitness of students.

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An Investigation Of Mood State At The End Of Competitive Season Between High And Low Level Cricketers

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Abstract

The purpose of the study was to evaluate the mood state at the end of competitive season between high and low level cricket players. To achieve the purpose 70 players were selected from virudhunagar district cricket league teams and they were divided into two groups as high (35) and low (35) level cricket players. These players were circulated with the Brunel mood state (BRUMS) questionnaire at the beginning of the cricket league matches. Independent *t* test was used to determine the difference between the high and low level cricket players. The result of the study showed that tension ($p > 0.436$), depression ($p > 0.760$), anger ($p > 0.228$), fatigue ($p > 0.391$) and confusion ($p > 0.176$) showed no significant difference between high and low level cricket players. However, vigour ($p < 0.009$) showed significant difference between high and low level cricket players at the end of the competitive season.

Keywords: BRUMS, Cricket, *t* test, Competitive midseason, district league etc

Introduction

A quest for sport psychologists working with teams is to identify constructs that relate with performance and manipulate these constructs to improve performance. Sport psychologists are faced with a plethora of possible constructs that could relate with performance, and thus selection of ones to work with is difficult (Murphy & Tammen, 1998). One variable that has been found to predict performance is mood. There is a vast amount of anecdotal evidence suggesting that poor performance is associated with a failure to get into an appropriate mood. Investigation of relationships between mood and performance has been a major focus of research in sport psychology (LeUnes & Burger, 1998; LeUnes, 2000). Morgan (1980) popularized mood research in sport with findings showing successful performance was associated with above average vigor coupled with below average anger, confusion, depression, fatigue, and tension. The cricketer's mood state can fluctuate a lot, due to possible underperformance, bad weather, a perceived bad umpire decision, team mates not performing and of course personal factors like relationships issues and family issues or events occurring during the day or evening which can and do effect an individual's mood state and performance out on the pitch. Therefore, it is crucial that players and coaches are aware of their moods and 'how' their mood state can affect their team environment and possible team performance. Indeed, Terry (1992; 1995) states that the mood of officials can affect the team and individual performances within the team. Terry (1992; 1995) maintains a strong case for extending mood profiling (see Terry and Lane, 2002) and the use of the POMS or BRUMS (Terry & Lane, 2002) as an assessment and monitoring tool to include team officials, coaches, and support staff whom he states "often bear the brunt of athlete frustration and whose mood disturbance can in turn further threaten the mood stability of performers." Terry (1995) also highlights the relationship between mood and attention. In cricket the importance of concentration and the ability to shift attention is paramount to performing well

and enhancing the opportunity and chances of performing at an individual's best and encouraging more of a successful personal performance, thus assisting the team's performance. Mood can affect a player's ability to shift concentration from say a narrow (e.g., a batsman watching the seam of the ball, to broad focus, looking at field placing and seeing where the gaps are to strike the ball into). Especially, if the player concerned has just dropped an important catch, and feels angry and depressed as the player believes he has let the team down.

Method

Participants Seventy (70) male cricket players were selected from various teams that took part in Virudhunagar district cricket league tournament organized by TNCA for the year 2010-2011. These players were classified into two groups as high and low level cricket players, based on the level of participation in the tournament. Thirty five (35) first division league players were selected and grouped into high level cricket players and similarly thirty five (35) second division league players were selected and grouped into low level cricket players.

Measures :Mood was assessed using the 24-item Brunel Mood Scale (Terry et al., 1999; Terry et al., 2003). The Brunel Mood Scale assesses anger, confusion, depression, fatigue, tension, and vigor. Items are rated on a 5-point scale anchored by 0 ("not at all") to 4 ("extremely").

Procedure :All participants were required to complete the Brunel Mood Scale questionnaire at the end of the competitive season of the Virudhunagar district cricket league. Cricket players testing were carried out following a training session. This was to ensure that the participants were in a similar state of mind for all three testing sessions and also to minimize the effect of other possible variable factors such as the player's response to the outcome of a game. The coach informed the players of the purpose of the study. He explained that the long-term aim was to develop individually tailored interventions designed to improve psychological states and performance. The participants were encouraged to report honestly. Participation by players was entirely voluntarily. Participants were free to withdraw at any part of the study with none of them withdrawing.

Statistical Analysis :Independent *t* test was used to determine the difference between the high and low level cricket players. The proposed hypothesis was tested at 0.05 level of confidence. Beside this mean and standard deviation were also calculated. SPSS statistic software package (SPSS Company, America, version 17.0) was used.

Results

Descriptive statistics and *t* value for tension, depression, anger, vigour, fatigue and confusion between high and low level cricket players are presented in table 1.

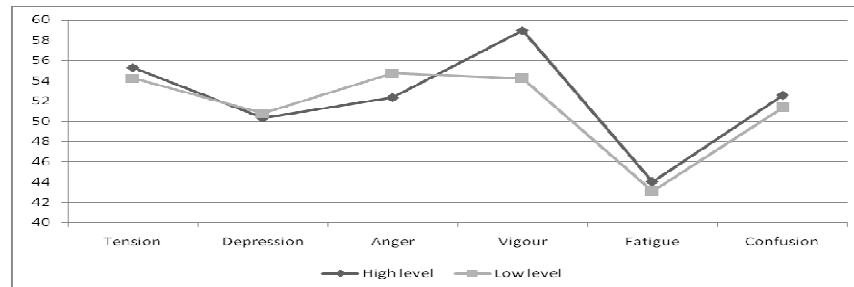
Table 1
Descriptive and *t* value between high and low level cricket players

Variables	Groups	N	Mean	Standard Deviation	<i>t</i>	<i>p</i>
Tension	high level	35	55.31	6.27	0.78	0.436
	low level	35	54.25	4.94		
Depression	high level	35	50.31	6.03	0.30	0.760
	low level	35	50.77	6.43		
Anger	high level	35	52.34	7.58	1.21	0.228
	low level	35	54.71	8.67		
Vigour	high level	35	58.94	5.82	2.67*	0.009
	low level	35	54.22	8.65		
Fatigue	high level	35	44.02	5.46	0.86	0.391
	low level	35	43.05	3.79		
Confusion	high level	35	52.54	3.08	1.36	0.176
	low level	35	51.34	4.17		

*Significant at 0.05 level of confidence

The t test showed no significant difference between high and low level cricket players on tension ($t = 0.78$, $p > 0.436$), depression ($t = 0.30$, $p > 0.760$), anger ($t = 1.217$, $p > 0.228$), fatigue ($t = 0.864$, $p > 0.391$) and confusion ($t = 1.369$, $p > 0.176$). However, vigour ($t = 2.674$, $p < 0.009$) showed significant difference between high and low level cricket players at the end of the competitive season. High level cricket players had greater vigour than low level cricket players at the end of competitive season. Figure 1 shows that mood scores between high and low level cricket players.

Figure 1
Mood state of high and low level cricket players at the end of competitive season



Discussion: The major points of interest apparent in the result is high level cricket players appeared to have the more positive mental health profiles at the end of the competitive season. With regard to the result, there being differences between the competitive standard groups in their mood state, researchers such as Morgan as early as (1979) successfully used the POMS questionnaire to identify more successful elite athletes from less successful elite athletes through their overall profile. At the middle of the season, mean profiles of each group appeared to agree with Morgan's findings: The high level cricket players clearly showed a more positive profile than the low level groups. In fact, the high level cricket players appeared to present an 'iceberg profile' with lowest normed scores for most of the negative affective states which was accompanied by a highest score for vigour. An explanation of this observation may be that the higher standard players benefited from a more active life style at this point, but without the negative effects of excessive training loads as they were at the middle of the season, appropriate recovery period in between matches.

Conclusion: Cricketers who are less anxious, angry, depressed, confused and fatigued, and more vigorous will be more successful than those cricketers who exhibit the opposite profile, as assessed by the Profile of Mood States (McNair, Lorn & Droppleman, 1971). At the end of the cricket league first division players showed better vigour.

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Comparative study of effect of sub junior, junior and senior age group on body mass index in Basketball players

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Abstract: The purpose of the study was to find the effect of sub junior, junior and senior age group on body mass index in Basketball players. There were 45 subjects selected. In each group 15 players were selected from their age group. Body mass index was measured through formula. After 'F' test significant differences were found in the body mass index between three groups.

Introduction: A number of studies are available in the literature regarding age related changes. The purpose of the study was to find the effect of sub junior, junior and senior age group on body mass index in Basketball players. It was hypothesized that "There would be significant difference in sub junior, junior and senior age group on body mass index in Basketball players."

Methodology: Forty five female Basketball players who came to take part at district level competition held at Patan district were selected for this study. All the important and requisite information about the study was given to participants. Age of the subjects was checked from their entry form which is filled by institution. The age group of sub-junior was under 14 year. The age group of junior was 14 to 16 years. The age group of senior was above 16 years. Body mass index was measured through formula like, $B.M.I. = \text{Weight (kg)} / \text{Height}^{(m.)^2}$

Results & Discussion: Statistical analysis of the data was done to study the sub junior, junior and senior group's age related effect on Body mass index in the three different age groups. F test was applied.

Table-1- Body Mass Index of Basketball player of three groups

Group	Mean	S.D.	'F'- value
Sub junior	21.09	2.61	7.01*
Junior	23.24	3.40	
senior	24.94	2.33	

The results of the study reveal significant differences between sub junior, junior and senior group in Body mass index f-test is 7.01. The results of the study suggested that there was significant difference in Body mass index among the sub junior, junior and senior group. In other words increase in age has significant effect on Body mass index in different groups.

Conclusion: There is a warning sign in the form of a significant negative impact of aging on the Body mass index of these subjects. These changes in overall adiposity and fat appear to be important factors in many common age related problems.

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Effect Of Isolated And Combined Continuous Running On Different Terrains In Terms Of Selected Respiratory Parameters

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ABSTRACT

The purpose of the study was to find the effects isolated and combined continuous running on different terrains in terms of selected respiratory parameters of college male students. To achieve this purpose of this study 75 male students from K.R.K. Government Degree College, Addanki, Prakasam District, A.P. India were randomly selected as subjects. The age of the subjects ranges from 18 to 23 years. The selected subjects were further randomly divided into 5 equal groups of 15 each. Group I underwent continuous running training on plain surface, Group II on sand surface, Group III on water surface, Group IV on different terrains and Group V acted as control group which did not participate in any training programme other than their regular college curriculum activities. All the five groups were tested on selected criterion variables such as vital capacity and reparatory rate at prior and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the collected data to find out the significant difference. The level of significance was fixed at 0.05 for confidence. Effect of isolated and combined continuous running training on different terrains proved significant differences in improving the vital capacity and lowering the respiratory rate.

Key Words: Isolated, Combined, Continuous running, Terrains, Vital Capacity etc

INTRODUCTION: Continuous running training is widely used in training methods to improve cardio respiratory endurance and its allied components. In this method exercise is done for long time without any break or pause. Because of the long duration of work the intensity is low. The continuous method has 4 variations i.e. slow continuous method, fast continuous method, variable pace method and Fartlek method. In slow continuous method sports men runs at a certain speed without any pause for very long durations. In this method the speed or pace of running is determined according to the heart rate. The heart rate during the running should be from 140 to 160 beats per minute. The volume in terms of duration should not be less than 30 minutes Running on sand could be weekly basis or on a daily basis during specific time of your time devoted to the development of aerobic system. In order to have full benefits of the use of sand, it was highly recommended to do bare foot running. Therefore it is worth while to investigate the effect of continuous running on different terrains in terms of vital capacity and respiratory rate of college male students who may use this for improving their performance.

METHODOLOGY: The purpose of the study was to find the effects isolated and combined continuous running on different terrains in terms of selected respiratory parameters like vital capacity and respiratory rate of college male students. The following steps were followed:

Selection of Subjects: 75 male students of K.R.K. Government Degree College, Addanki were randomly selected and they were further divided into 5 groups of 15 each at random.

Selection of Variables: The respiratory variables selected for testing were vital capacity, and respiratory rate.

Selection of Tests: Vital capacity was measured through wet spirometre in cubic centimeters and respiratory rate is measured through expirograph in numbers per minute.

Experimental Design: All four experimental groups underwent continuous running traing on plain surface, sand surface, water surface and on combined terrains respectively for twelve weeks i.e., three days a week in alternate days. Group five acted as control group which did not participate in any special training other than their regular curricular activities.

Collection of data: All five groups were tested in vital capacity and respiratory rate prior to training and immediately after twelve weeks training as pre and post test scores.

Table -1:Analysis Of Covariance Of The Data On Vital Capacity Of Pre And Post Test Scores Of Continuous Running On Plain, Sand, Water, Different Terrains And Control Groups

	Continuous running On plain surface	Continuous running On sand surface	Continuous running On water surface	Continuous running On different surfaces	Control group	Source Of Variance	Sum Of Squares	df	Mean Squares	"F" ratio
PreTest mean	2002.14	2001.42	2002.62	2001.72	2000.89	Between	55.12	4	13.78	1.38
SD	3.18	2.89	3.11	3.11	2.69	With in	694.26	70	9.91	
PostTest Mean	2100.41	2144.32	2112.32	2148.24	2001.12	Between	2324.26	4	581.06	36.91*
SD	6.07	3.69	3.08	3.33	2.74	With in	1101.73	70	15.74	
Adjus-Ted PostTest Mean	2100.42	2144.86	2113.12	2148.86	2001.32	Between	2565.19	4	641.29	74.05*
						Within	597.5	69	8.65	

Significant at 0.05 level of confidence

(The table values required for significance at 0.05 level of confidence for 4 and 70, 4 and 69 are 2.157 and 2.158 respectively)

Table – 1 shows that the pre test mean values on vital capacity of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 2002.14, 2001.42, 2002.62, 2001.72 and 2000.89 respectively. The obtained 'F' ratio of 1.38 for pre-test scores is less than the table value of 2.157 for df 4 and 70 required for significance at 0.05 level of confidence. The post test mean values on vital capacity of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 2100.41, 2144.32, 2112.32, 2148.24 and 2001.12 respectively. The obtained 'F' ratio of 36.91 for post-test scores is more than the required table value of 2.157 for df 4 and 70 required for significance at 0.05 level of confidence. The adjusted post test mean values on vital capacity of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 2100.42, 2144.86, 2113.12, 2148.86 and 2001.32 respectively. The obtained 'F' ratio of 74.05 for adjusted post-test scores is more than the table value of 2.157 for df 4 and 69 required for significance at 0.05 level of confidence. The results of the study indicates that there was a significant difference among the continuous running on plain surface, sand surface, water surface, different terrains and control groups on vital capacity after training. Since 5 groups were compared and 'F' ratio for adjusted post test means was found to be significant the Scheffe's post hoc test was used to find the paired mean difference between five groups. The results of the study showed that there was significant mean differences between the groups other than sand surface group and different terrain groups.

Table – 2:Analysis Of Covariance Of The Data On Respiratory Rate Of Pre And Post Test Scores Of Continuous Running On Plain, Sand, Water, Different Terrains And Control Group

	Continuous running On plain surface	Continuous running On sand surface	Continuous running On water surface	Continuous running On different surfaces	Control group	Source Of Variance	Sum Of Squares	df	Mean Squares	"F" ratio
Pre Test mean	17.86	17.60	17.86	18.06	17.73	Between	1.81	4	0.45	0.815
SD	0.83	0.63	0.74	0.7	0.79	With in	38.93	70	0.55	
Post Test Mean	17.34	16.39	16.89	16.14	17.62	Between	26.72	4	6.68	11.49*
SD	0.72	0.72	0.74	0.7	0.89	With in	40.66	70	0.581	
Adjusted Post Test Mean	17.33	16.33	16.86	16.06	17.66	Between	31.48	4	7.87	73.59*
						Within	7.38	69	0.107	

Significant at 0.05 level of confidence

(The table values required for significance at 0.05 level of confidence for 4 and 70, 4 and 69 are 2.157 and 2.158 respectively)

Table – 2 shows that the pre test mean values on respiratory rate of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 17.86, 17.6, 17.86, 18.06 and 17.73 respectively. The obtained 'F' ratio of 0.815 for pre-test scores is less than the table value of 2.157 for df 4 and 70 required for significance at 0.05 level of confidence. The post test mean values on respiratory rate of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 17.34, 16.39, 16.89, 16.14, 17.62 respectively. The obtained 'F' ratio of 11.49 for post-test scores is more than the required table value of 2.157 for df 4 and 70 required for significance at 0.05 level of confidence. The adjusted post test mean values on vital capacity of continuous running on plain surface, sand surface, water surface, different terrains and control groups are 17.33, 16.33, 16.86, 16.06 and 17.66 respectively. The obtained 'F' ratio of 73.59 for adjusted post-test scores is more than the table value of 2.158 for df 4 and 69 required for significance at 0.05 level of confidence. The results of the study indicates that there was a significant difference among continuous running on plain surface, sand surface, water surface, different terrains and control group on respiratory rate after training. Since 5 groups were compared and 'F' ratio for adjusted post test means was found to be significant the Scheffe's post hoc test was used to find the paired mean difference between five groups. The results of the study showed that there was significant mean differences between the groups other than sand surface group and different terrain groups.

Discussion and findings: The analysis of covariance was used to find the effect of isolated and combined continuous running on different terrains on vital capacity and respiratory rate. It was observed that there was significant difference between the experimental groups and control groups. Because of the effects of slow continuous running method was relatively low in intensity and very high in volume are mainly limited to the muscles. Some of the important changes in the muscle are increase in muscle and liver glycogen, increase capillarisation, increase in the quantity of oxidative enzymes, increase in number and size of mitochondria, better thermo regularization and improvement in the movement economy

Conclusion and Recommendations:

12 weeks of isolated and combined continuous running on different terrains brought lot of improvement in vital capacity and lowering the respiratory rate. Further it is recommended to use this training for female students to improve physical and physiological variables

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Developing A Culturally Responsive Pedagogy

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Abstract

Policies in the field of education have a major impact on the flourishing or decline of cultural diversity, and must seek to promote education through and for diversity. This guarantees the right to education by acknowledging the diversity of learners' needs – especially those of minority, indigenous and nomadic groups – and by integrating a corresponding diversity of methods and contents. In increasingly complex multicultural societies, education must enable us to acquire the intercultural competencies that will permit us to live together with – and not despite – our cultural differences. The four principles of quality education defined by the report of the World Commission on Education for the 21st Century – 'learning to be', 'learning to know', 'learning to do' and 'learning to live together' – can be successfully implemented only if cultural diversity is situated at their core. In short, teachers must be culturally responsive, utilizing materials and examples, engaging in practices, and demonstrating values that include rather than exclude students from different backgrounds. By so doing, teachers fulfill their responsibility to all their students.

Key Words: Institutional, Personal, Instructional Pedagogy and Skills

Introduction:

Education is frequently discussed in terms of knowledge transmission and the development of often standardized conceptions of behavioural and social skills. Yet education is also about value transmission – both within and between generations and across cultures. Policies in the field of education have a major impact on the flourishing or decline of cultural diversity, and must seek to promote education through and for diversity. This guarantees the right to education by acknowledging the diversity of learners' needs – especially those of minority, indigenous and nomadic groups – and by integrating a corresponding diversity of methods and contents. In increasingly complex multicultural societies, education must enable us to acquire the intercultural competencies that will permit us to live together with – and not despite – our cultural differences. The four principles of quality education defined by the report of the World Commission on Education for the 21st Century – 'learning to be', 'learning to know', 'learning to do' and 'learning to live together' – can be successfully implemented only if cultural diversity is situated at their core.

Why Do We Need to Consider Diversity?

As more and more students from diverse backgrounds enter the 21st century classrooms, it has become more challenging to identify effective methods to teach these students, the need for pedagogical approaches that are culturally responsive intensifies. Today's classrooms require teachers to educate students varying in culture, language, abilities, and many other characteristics (Gollnick & Chinn, 2002). To meet this challenge, teachers must employ not only theoretically sound but also culturally responsive pedagogy. Teachers must create a classroom culture where all students regardless of their cultural and linguistic background are welcomed and supported, and provided with the best opportunity to learn.

For many students, the kinds of behaviors required in school (e.g., sitting in one's seat and only speaking when called on) and types of discourse (e.g., "Class, what is the title of this book?") contrast with home cultural and linguistic practices. To increase student success, it is imperative that teachers help students bridge this discontinuity between home and school (Allen & Boykin, 1992). Moreover, a culturally responsive instructional environment minimizes the students' alienation as they attempt to adjust to the different "world" of school (Heath, 1983; Ladson-Billings, 1994). This brief defines culturally responsive pedagogy and explains how it might be used effectively to address the instructional needs of a diverse student population

What is Culturally Responsive Pedagogy?

Culturally responsive pedagogy facilitates and supports the achievement of all students. In a culturally responsive classroom, effective teaching and learning occur in a culturally supported, learner-centered context, whereby the strengths students bring to school are identified, nurtured, and utilized to promote student achievement. Culturally responsive pedagogy comprises three dimensions: **(a) Institutional, (b) Personal, and (c) Instructional.**

1. The Institutional Dimension: What Must the Educational System Do?

The educational system is the institution that provides the physical and political structure for schools. To make the institution more culturally responsive, reforms must occur in at least three specific areas :

- a. **Organization of the School:** This includes the administrative structure and the way it relates to diversity, and the use of physical space in planning schools and arranging classrooms.
- b. **School Policies and Procedures:** This refers to those policies and practices that impact on the delivery of services to students from diverse backgrounds.
- c. **Community involvement:** This is concerned with the institutional approach to community involvement in which families and communities are expected to find ways to become involved in the school, rather than the school seeking connections with families and communities.

Although all three areas in the institution must become more culturally responsive, a particular concern is the impact of school policies and procedures on the allocation of resources.

2. The Personal Dimension: How Do Teachers Become Culturally Responsive?

Teacher self-reflection is an important part of the personal dimension. By honestly examining their attitudes and beliefs about themselves and others, teachers begin to discover why they are who they are, and can confront biases that have influenced their value system. Because teachers' values impact relationships with students and their families, teachers must reconcile negative feelings towards any cultural, language, or ethnic group. Often teachers are resistant to the notion that their values might reflect prejudices or even racism towards certain groups. When teachers are able to rid themselves of such biases, they help to create an atmosphere of trust and acceptance for students and their families, resulting in greater opportunity for student success. Another important aspect of the personal dimension is exploration. It is crucial that teachers explore their personal histories and experiences, as well as the history and current experiences of their students and families. With knowledge comes understanding of self and others, and greater appreciation of differences. When teachers are unbiased in their instruction and knowledgeable about themselves and their students, they can better respond to the needs of all their students.

Specific Activities for Becoming a Culturally Responsive Teacher

- a. **Encourage Themselves in Reflective Thinking and Writing:** Teachers must reflect on their actions and interactions as they try to discern the personal motivations that govern their behaviors. Understanding the factors that contribute to certain behaviors (e.g., racism, ethnocentrism) is the first step toward changing these behaviors. This process is facilitated by autobiographical and reflective writing, usually in a journal.

- b. **Explore Personal and Family Histories:** Teachers need to explore their early experiences and familial events that have contributed to their understanding of themselves as racial or nonracial beings. As part of this process, teachers can conduct informal interviews of family members (e.g., parents, grandparents) about their beliefs and experiences regarding different groups in society. The information shared can enlighten teachers about the roots of their own views. When teachers come to terms with the historical shaping of their values, teachers can better relate to other individuals.
- c. **Acknowledge Membership in Different Groups:** Teachers must recognize and acknowledge their affiliation with various groups in society, and the advantages and disadvantages of belonging to each group.
- d. **Learn About the History and Experiences of Diverse Groups:** It is important that teachers learn about the lives and experiences of other groups in order to understand how different historical experiences have shaped attitudes and perspectives of various groups. Further, by learning about other groups, teachers begin to see differences between their own values and those of other groups. To learn about the histories of diverse groups, particularly from their perspectives, teachers can read literature written by those particular groups as well as personally interact with members of those groups.
- e. **Visit Students' Families and Communities:** It is important that teachers get to know their students' families and communities by actually going into the students' home environments. This allows teachers to relate to their students as more than just "bodies" in the classroom but also as social and cultural beings connected to a complex social and cultural network. Moreover, by becoming familiar with students' home lives, teachers gain insight into the influences on the students' attitudes and behaviors. Additionally, teachers can use the families and communities as resources (e.g., classroom helpers or speakers) that will contribute to the educational growth of the students.
- f. **Visit or Read About Successful Teachers in Diverse Settings:** Teachers need to learn about successful approaches to educating children from diverse backgrounds. By actually visiting classrooms of successful teachers of children from diverse backgrounds and/or reading authentic accounts of such success, teachers can gain exemplary models for developing their own skills.
- g. **Develop An Appreciation of Diversity:** To be effective in a diverse classroom, teachers must have an appreciation of diversity. They must view difference as the "norm" in society and reject notions that any one group is more competent than another. This entails developing respect for differences, and the willingness to teach from this perspective. Moreover, there must be an acknowledgment that the teachers' views of the world are not the only views.
- h. **Participate in Reforming the Institution:** The educational system has historically fostered the achievement of one segment of the school population by establishing culturally biased standards and values. The monocultural values of schools have promoted biases in curriculum development and instructional practices that have been detrimental to the achievement of students from culturally and linguistically diverse backgrounds. Teachers need to participate in reforming the educational system so that it becomes inclusive. As the direct link between the institution and the students, teachers are in a pivotal position to facilitate change. By continuing a traditional "conform-or-fail" approach to instruction, teachers perpetuate a monoculture institution. By questioning traditional policies and practices, and by becoming culturally responsive in instruction, teachers work toward changing the institution.

3. The Instructional Dimension: How Does Instruction Become Culturally Responsive?

When the tools of instruction (i.e., books, teaching methods, and activities) are incompatible with, or worse marginalize, the students' cultural experiences, a disconnect with school is likely. For some students this rejection of school may take the form of simply underachieving; for others, rejection could range from not performing at all to dropping out of school completely. Culturally responsive pedagogy recognizes and utilizes the students' culture and language in instruction, and ultimately respects the students' personal and community identities.

Specific Activities for Culturally Responsive Instruction

- a. **Acknowledge Students' Differences As Well As Their Commonalities:** While it is important for teachers to note the shared values and practices of their students, it is equally incumbent that teachers recognize the individual differences of students. Certainly, culture and language may contribute to behaviors and attitudes exhibited by students. For example, some cultures forbid children to engage in direct eye contact with adults; thus, when these children refuse to look at the teacher, they are not being defiant but practicing their culture. However, for teachers to ascribe particular characteristics to a student solely because of his/her ethnic or racial group demonstrates just as much prejudice as expecting all students to conform to mainstream cultural practices. Moreover, because each student is unique, learning needs will be different. Recognizing these distinctions enhances the ability of the teacher to address the individual needs of the students. The key is to respond to each student based on his/her identified strengths and weaknesses, and not on preconceived notions about the student's group affiliation.
- b. **Validate students' cultural identity in classroom practices and instructional materials:** Teachers should, to the extent possible, use textbooks, design bulletin boards, and implement classroom activities culturally supportive of their students. When the school-assigned textbooks and other instructional materials perpetuate stereotypes or fail to adequately represent diverse groups, teachers must supplement instruction with resources rich in diversity and sensitive in portrayal of individuals from different backgrounds. By utilizing images and practices familiar to students, teachers can capitalize on the strengths students bring to school. The more students experience familiar practices in instruction and are allowed to think differently, the greater the feeling of inclusion and the higher the probability of success. For example, in some communities, members work together in a supportive manner to accomplish many tasks in their daily lives. Reflecting these home practices in instructional approach, such as the use of cooperative learning, increases the likelihood of success for these students.
- c. **Educate Students About the Diversity of The World Around Them:** As the "village" in which students live becomes more global, they are challenged to interact with people from various backgrounds. When students are ignorant about the differences of other groups, there is a greater probability of conflicts. Particularly in the classroom where student diversity is increasing, students need the skills to relate to each other positively, regardless of cultural and linguistic differences. Teachers need to provide students with learning opportunities (e.g., have students interview individuals from other cultures; link students to email pals from other communities and cultures) so that they might become more culturally knowledgeable and competent when encountering others who are different. Furthermore, students will develop an appreciation for other groups when they learn of the contributions of different peoples to the advancement of the human race. A word of caution, this requires active research and planning by teachers so that cultural stereotypes are not inadvertently reinforced.
- d. **Promote Equity and Mutual Respect Among Students:** In a classroom of diverse cultures, languages, and abilities, it is imperative that all students feel fairly treated and respected. When students are subjected to unfair discrimination because of their differences, the results can be feelings of unworthiness, frustration, or anger, often resulting in low achievement. Teachers need to establish and maintain standards of behavior that require respectful treatment of all in the classroom. Teachers can be role models, demonstrating fairness and reminding students that difference is normal. Further, teachers need to monitor what types of behaviors and communication styles are rewarded and praised. Oftentimes these behaviors and ways of communicating are aligned with cultural practices. Care must be taken so as not to penalize a student's behavior just because of a cultural difference.
- e. **Assess Students' Ability and Achievement Validly:** The assessment of students' abilities and achievement must be as accurate and complete as possible if effective instructional programming is to occur. This can only be accomplished when the assessment instruments and procedures are valid for the population being assessed. In

- today's schools students possess differences in culture and language that might predispose them to different communication practices and even different test-taking skills. Hence, assessment instruments should be varied and suited to the population being tested. When this does not occur, invalid judgments about students' abilities or achievement are likely to result. Further, tests that are not sensitive to students' cultural and linguistic background will often merely indicate what the students don't know (about the mainstream culture and language) and very little about what they do. Thus, the opportunity to build on what students do know is lost.
- f. **Foster a Positive Interrelationship Among Students, Their Families, the Community and School:** When students come to school they bring knowledge shaped by their families and community; they return home with new knowledge fostered by the school and its practitioners. Students' performance in school will likely be affected by the ability of the teacher to negotiate this home-community-school relationship effectively. When teachers tap into the resources of the community by inviting parents and other community members into the classroom as respected partners in the teaching-learning process, this interrelationship is positively reinforced. To further strengthen their bond with the students and their community, teachers might even participate in community events where possible. Moreover, everyone benefits when there is evidence of mutual respect and value for the contributions all can make to educating the whole student.
 - g. **Motivate Students to Become Active Participants in Their Learning:** Teachers must encourage students to become active learners who regulate their own learning through reflection and evaluation. Students who are actively engaged in their learning ask questions rather than accept information uncritically. They self-regulate the development of their knowledge by setting goals, evaluating their performance, utilizing feedback, and tailoring their strategies. For example, by examining his or her learning patterns, a student may come to realize that reviewing materials with visual aids enhances retention, or that studying with a partner helps to process the information better. It is important, therefore, that teachers structure a classroom environment conducive to inquiry-based learning, one that allows students to pose questions to themselves, to each other, and to the teacher.
 - h. **Encourage Students to Think Critically and Creatively:** A major goal of teaching is to help students become independent thinkers so that they might learn to make responsible decisions. Critical thinking requires students to analyze (i.e., examine constituent parts or elements) and synthesize (i.e., collect and summarize) information, and to view situations from multiple perspectives, and creative thinking means thinking beyond the framework. When teachers provide opportunities for students to engage in this kind of reasoning, students learn how to think "outside the box." More important, these students learn to think for themselves. These students are less likely to accept stereotypes and to formulate opinions based on ignorance. To foster these skills, teachers might devise "what if" scenarios, requiring students to think about specific situations from different viewpoints. More important duty of a teacher is to guide the student in right way.
 - i. **Challenge to Strive for Excellence as Defined by Their Potential:** All students have the potential to learn, regardless of their cultural or linguistic background, ability or disability. Many students often stop trying because of a history of failure. Others, disenchanted with a low-level or irrelevant curriculum, work just enough to get by. Teachers have a responsibility to continually motivate all students by reminding them that they are capable and by providing them with a challenging and meaningful curriculum. Low teacher expectations will yield low student performance. It is important to engage students in activities that demonstrate how much they can learn when provided with appropriate assistance. As students progress, teachers need to continually "raise the bar," giving students just the right amount of assistance to take them one step higher, thereby helping students to strive for their potential.
 - j. **Assist Students in Becoming Socially and Politically Conscious:** Teachers must prepare students to participate meaningfully and responsibly not only in the classroom but also in society. Meaningful and responsible participation requires everyone to critically examine societal policies and practices, and to work to correct injustices that exist. Students must be taught that if the world is to be a better place where everyone is

treated fairly, then they have to work to make it so. This is their responsibility as citizens of their country and inhabitants of the earth. To foster this consciousness, teachers might have students write group or individual letters to politicians and newspaper editors voicing their concerns about specific social issues; or students might participate in food or clothing drives to help people less fortunate.

Conclusion :

Teachers have a responsibility to all their students to ensure that all have an equal opportunity to achieve to the best of their ability. If instruction reflects the cultural and linguistic practices and values of only one group of students, then the other students are denied an equal opportunity to learn. Instruction that is culturally responsive addresses the needs of all learners. The educational system plans the curriculum for schools, and teachers as their “institutional agents” transfer the prescribed content to their students. This daily contact with students provides teachers with a unique opportunity to either further the status quo or make a difference that will impact not only the achievement but also the lives of their students. Indeed, teachers must recognize their “power” and use it wisely in teaching other people’s children (Delpit, 1988). Although the curriculum may be dictated by the school system, teachers teach it. Where the curriculum falls short in addressing the needs of all students, teachers must provide a bridge; where the system reflects cultural and linguistic insensitivity, teachers must demonstrate understanding and support. In short, teachers must be culturally responsive, utilizing materials and examples, engaging in practices, and demonstrating values that include rather than exclude students from different backgrounds. By so doing, teachers fulfill their responsibility to all their students.

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Comparative Study of Health Related Physical Fitness Components of Basketball and Handball Male Players

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Abstract

In the present study, an attempt has been made to compare health related physical fitness components of basketball and handball male players of Maharishi Markandeshwar University Ambala, Haryana, India, whose age is between 18 and 25. These components are muscular abdominal endurance, muscular shoulder strength, body fat percentage, flexibility and cardio-respiratory endurance. The data was collected with the help of calibrated instruments and field tests. The test adopted for each component are bend knee sit ups, pull ups, skinfold measurements (% based on Durnin, and Womersley, 1974), sit and reach test, one & half run/walk test. The study was carried out on 50 male players, 25 from basketball and 25 from handball. The data was analyzed and compared with the help of statistical methods in which arithmetic mean, standard error deviation (SED) and t-test were employed. The basketball and handball players have same muscular shoulder strength and flexibility. Basketball players have better cardio- respiratory endurance and less body fat. But Handball players have better abdominal muscular endurance then basketball players.

Keywords: Muscular strength, Cardio respiratory endurance, Body fat percentage, Flexibility and Muscular endurance.

1. Introduction

Physical fitness is a simple term with a wide meaning. Physical fitness is more than the possession of strength and endurance. It means having the best possible health with the capacity to do ones everyday task to engage in recreational pursuits and to meet emergencies, when they arise. As a matter of fact, Physical Fitness is possesses by the individual, who retains enthusiastic, works cheerfully and does the emergency work with vigor.

Physical fitness according to Corbin et al. (2000) is a state of being that consists of five health related and six skill related physical fitness components. Health related physical fitness consists of body composition, cardiovascular fitness, flexibility, muscular endurance and muscular strength. It is related to reduce risk of chronic disease and has wellness benefits (U.S Department of Health and Human Services 1996). Large epidemiological studies have shown that people need an adequate level of fitness to live healthy, disease free lives (Blair et al. 1995; Paffenbarger et al. 1994). Barkha (2004) conducted the study on "the comparative study of health related fitness among physical education students and non physical education students". She found that B.P.Ed students are fit in relation to health related fitness (Barkha, 2004). The aim of Bik chow (2005) study was to compare health-related physical fitness in Hong Kong youth, with and without intellectual disability (ID). The present study findings reveals that the physical fitness level are almost similar to normal student however, more attention and care must be given to the ID student with respect to health and normal growth development. Singh and Bala (2006) conducted the study on "health related fitness among obese and non-obese college women". Analysis of variance (ANOVA) revealed that there were significant mean differences among lean, average and obese group on cardio respiratory fitness ($F=315.28$, $P<0.05$), abdominal strength ($F=136.88$) and flexibility (20.40 , $P<0.05$) variables of health related physical fitness (Singh and Bala 2006). Charles (2006) conducted a study on the "difference in heath for rural and urban

Canadians". His report shows that Canadians living in rural areas generally have higher mortality rates than those living in urban areas (Charles, 2006).

2. Objective of the study

The objective of the present study was to compare health related physical fitness components of basketball and handball male players of Maharishi Markandeshwar University Ambala, Haryana.

3. Hypothesis

It will be hypothesized that there will be no significant difference in health related physical fitness components of basketball and handball male players of Maharishi Markandeshwar University, Ambala, Haryana, India.

4. Methodology

4.1 Sampling

The study was carried out on 50 subjects which were 25 basketball and 25 Handball male players from various Institutes of Maharishi Markendashwar University, Mullana. These were the Institutes, of Medical Sciences and Research, Dental Sciences and Research, Management and Computer Sciences, Law and Management. The selection of the subject was made on the basis of random sampling from player's populations (Basketball and Handball players) of different colleges in Maharishi Markendashwar University, Mullana, India. Those players were selected for conducting the study whose age between 18-25 years.

4.2 Selection of Variable

The physical fitness variables for the present investigation are muscular abdominal endurance, muscular shoulder strength, body fat percentage, flexibility, and cardio-respiratory endurance.

4.3 Collection of data

The data was collected by use of test like bend knee sit ups, pull ups, skin measurements, sit and reach test, one & half run/walk test.

4.4 Statistical Techniques used for analysis

The data was analyzed and compared with the help of statistical procedure in which arithmetic mean, standard deviation, standard error of deviation, and t-test used to compare the data. The level of significance was chosen to be 0.05.

5. Results and discussion

The results and finding are analyzed and interpreted in table-1 as follow:

Table 1

Tabular value at 0.05 (48) = 2.01

* = significant at 0.05

S.No.	Variables	Tests	Basket ball Player Mean	Hand ball Player Mean	Mean Difference	Basketball Player std deviation	Handball Player std deviation	Std Error deviation	Deg.off freedom	T Ratio
1.	Muscular abdominal endurance	Bend Knee sit-ups (NOS)	17.20	22.20	5.00	5.78	5.94	1.66	48	3.01*
2.	Muscular shoulder strength	Pull ups (NOP)	13.20	13.30	0.10	2.50	2.62	0.72	48	0.14
3.	Body fat percentage	Skinfold measurements (Millimeter)	16.09	21.40	5.31	8.01	8.41	2.32	48	2.29*
4.	Flexibility	Sit and reach Test (cm)	5.44	5.36	0.08	2.02	1.94	0.56	48	0.14
5.	Cardio-respiratory endurance	One and half mile run/walk (Mile)	10.52	12.58	2.06	3.02	4.04	1	48	2.06*

According to Table 1, bend knee sit ups test mean value of basketball players is 17.20, the mean value of handball players is 22.20. The mean gain made by handball players is 5.00. The calculated “t”-value is 3.01. The tabular “t”-value is 2.01, which is statistically significant when compare to table value of “t” at 0.05 level of significance. Hence we can say that handball players are better than basketball players in case of bend knee sit up. These results are also shown in figure 1.

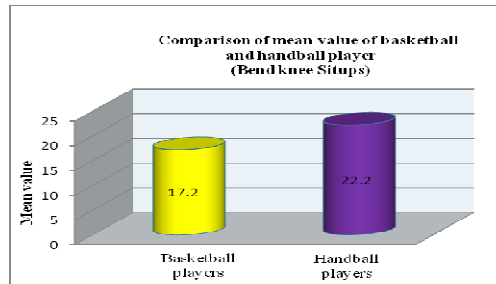


Figure-1

According to Table 1, pull ups test mean value of basketball players is 13.20, the mean value of handball player is 13.30. The mean gain made by handball players is 0.10, the calculated “t”-value is 0.14. The tabular “t”-value is 2.01, which is statistically in non-significant when compare to table value of “t” at 0.05 level of significance. Hence we may conclude that the basketball players and handball players are performing same number of pull ups. This fact is further supported by the graphical depiction of mean value of pull ups of basketball and handball players in Figure 1.

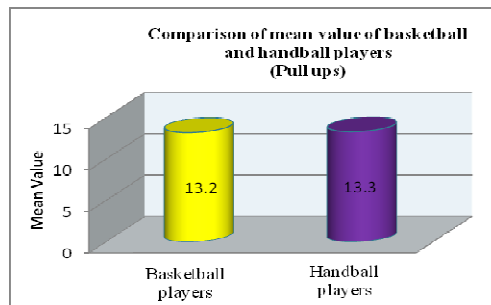


Figure-2

According to Table 1, skinfold measurement mean value of basketball players is 16.09 mm and the mean value of handball players is 21.40 mm. The basketball players have less fat of 5.31 mm, the calculated “t”-value is 2.29. The tabular “t”-value is 2.01, which is statistically significant when compare to table value of “t” at 0.05 level of significance. Hence it is concluded that the handball players have much batter then handball players. This fact is further supported by the graphical depiction of mean value of skinfold measurement of basketball and handball players in Figure 2.

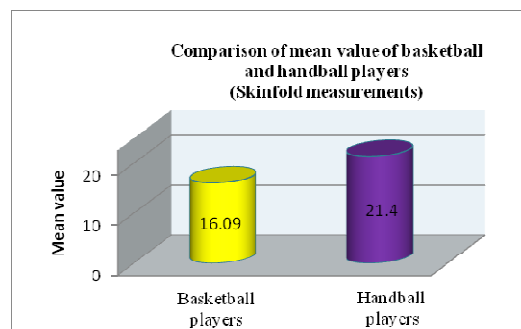


Figure-3

According to Table 1, sit and reach test mean value of basketball players is 5.44 cm and the mean value of handball players is 5.36 cm. The mean gain made by handball subjects is 0.08 cm, the calculated “t”-value is 0.14. The tabular “t”-value is 2.01, which is statistically non-

significant when compare of table value of t at 0.05 level of significance. Hence is may be concluded that basketball and handball are of same performance in case of sit and reach. These results are also shown in figure 3.

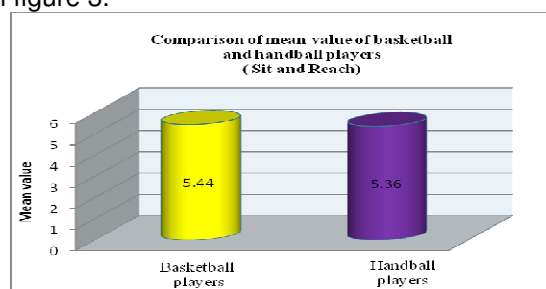


Figure-4

According to Table 1, one and half mile run/walk test mean value of basketball players is 10.52 minute, the mean value of handball players is 12.58 minute, the player of handball have taken more time of 2.06 minute. The calculated " t "- value is 2.06.

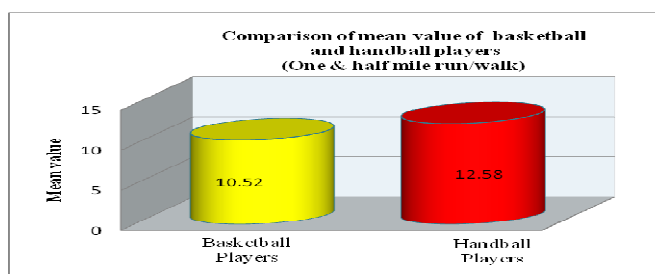


Figure-5

The tabular " t "-value is 2.01, which is statistically significant when compare to table value of " t " at 0.05 level of significance. Hence is may be concluded that basketball players have taken less time as compare to handball players in case of one and half mile run/walk. These results are also shown in figure 5 as histograms.

6. Conclusions

The basketball and handball players have same muscular shoulder strength and flexibility. But the handball players have better abdominal muscular endurance as compared to basketball players. Further, basketball players have better cardio- respiratory endurance as compared to handball players. It is also found that the basketball players have less body fat then handball players. So from above conclusions we conclude that null hypothesis is accepted in case of muscular shoulder strength, flexibility and rejected in case of abdominal muscular endurance, cardio-respiratory endurance and body fat percentage.

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Air Pistol Target Shooting; Retrospective Study

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ABSTRACT

Present work describes the historical perspective of pistol shooting sports. From the existing literature on shooting the researchers of the past had explored many of the branches of knowledge, viz. techniques and training etc, but hardly exclusive study aimed at highlighting pistol shooting sports has been conducted. The invention of gunpowder brought about a big revolution in shooting events. It is evident that the European societies remained dominant from the origin to organized shooting sports. The present study is both descriptive and historical in nature. Different approaches were applied to study scriptures depending upon the need of the present work.

Keywords: Retrospective Study, Gunpowder, ISSF, Air Pistol, Target Shooting Sports

INTRODUCTION

Every sport passes through an evolutionary phase before it acquires the status of a modern competitive sport event. Since time Immortal people have been fascinated by weaponry. A glimpse of this may be had in that at one time a civilian carrying arms was regarded as a special person in the society although many times arms were banned due to its royal prospective. In ancient times important weapons were daggers and close quarter spears which were followed by bows and slings. In shooting sport event air pistol is one of the newer forms where in, a shooter uses static target and firing position. In air pistol shooting (caliber .177), competitors stands at a firing line 10 meters from the target. The task is confined to hold the pistol steadily, aiming at the target, smoothly squeezing the trigger which task 500g of pressure to release. It is a tough task, and to repeat the process with precision for 60 shots demands the most rigid mental aptitude. A world class shooter succeeds scoring around 590/600 (men) and 390/400 (women) which means only 10 shots fail to hit the bull's eye. In this communication, the researcher has focused on two major aspects of shooting sports, first the history of shooting sports, and second, the development of air pistol in shooting sports history.

PROCEDURE

In this descriptive and historical study, the investigator has applied the analytical approach to study the primary and historical resources. The reports of various authors on the topic have also been consulted from the sources like books, journals, encyclopedias, periodicals and original reports and subjected to thorough analysis. The present study focuses at exploring the historical perspective of air pistol shooting sports gather from shooting scriptures investigation. A sincere effort has been made to study the primary and historical sources. The works of various authors on the topic have also been explored. Information available from the various sources like books, journals, encyclopedias, periodicals and research work conducted by various researchers from time to time were analyzed. The present study aimed at exploring the historical perspective of pistol shooting sports from the shooting scriptures.

HISTORY OF SHOOTING

A few historians articulate that the Persians or the Greeks discovered the gunpowder, while others state that a Franciscan monk named Berthold Schwarz who was born in Germany in 14th century invented it. Ammunition is an inseparable part of the shooting itself and it is chiefly described in the caliber of the weapon and it is on purpose to fitting. Though firearm machinery has advanced and has become extremely sophisticated over the centuries, the key principles remain the same: a metal pipe closed at one end with a small opening made or left in it. The gunpowder and the projectile were fed into the open end of the pipe and rammed to the far end. The gunpowder was then burst into flames through the little opening and projectile-usually a stone or other metal ball was shot from the pipe. The discovery of the wheel-lock made the pistol a practicable proposition. The wheel-lock is a metal disc combined with a coiled spring. Some of

the early wheel-lock pistols of the late sixteenth and seventeenth centuries were not simply good-looking weapons, chased and gilded and engraved, but were accurate and hard-hitting. These appear to have been more popular than rifled muskets, because being shorter in the barrel they were not so difficult to load. Screw-barreled pistol of which the rifled barrel could be unscrewed from the butt so that the ball and charge could be loaded into the breech, were not uncommon. Wheel-locks were expensive and complicated but the flint-lock pistol was a cheap and common weapon, carried by every cavalry trooper. For the duration of the eighteenth century the pistol progressively put back the rapier/ sword as the duelist's favorite weapon, especially in England, Ireland and America where the flag of swordsmanship was generally low. The customary technique of firing was with the pistol almost at arm's length, the elbow almost straight. Some fired in an awkward, cramped position, the arm bent and the elbow down so as to give some protection to the body.

Contests were occasionally fought on horse back, the revelries firing as they galloped past one another their pistols charged either with ball or with swan-shot. In 1665 in France Madame de la Pre-Abbe and Mademoiselle de la Motte fought such a duel. Dueling achieved its full ridiculousness in the early twentieth century when dueling pistols were intentionally made to be almost inoffensive. The barrels were so deficiently bored and the trigger-pull was so rigid. There were pistols made to be similar to daggers or riding whips. These pistols were tiny and had less usefulness. For the period of three centuries all effectual pistols were single or double barreled, single or two shot weapons. The automatic pistol emerged in the late nineteenth century. There are innumerable manufacturers and patterns, but all based on the same principle. When the wheel-lock is released by squeezing the trigger, the pressure of the spring causes the metal disc to spin backwards, scraping against a flint as it does. This causes a shower of sparks that ignites the fine gunpowder in the pan. This technique is still widely used for modern cigarette lighters. The flint was secured in the jaws of a kind of hammer. This cock/hammer as it is called was fixed to the side of the weapon and could be drawn backwards against the tension of the spring and locked into position. When the trigger was pressed the flint struck a metal plate close to the flash hole. The resulting sparks ignited the gunpowder in the flash hole.

Hitting/percussion explosion/ignition was the foremost footstep in the advancement of firearms. A Scottish priest, Alexander Forsyth invented the percussion primer. Around 1820, a highly explosive chemical composite was developed that could be lodged in a minute cap. The difficulty of using an exposed flame for ignition became a thing of the past. The manufacture of cartridge is the next most important step in the history of firearms. The components of the cartridge were gun powder, percussion cap and brass case and they were assembled in one unit. Cartridge had to be placed in the chamber of the barrel through the back of the fire arm. This meant that the rear of the barrel had to be open to load the weapon. The bolt-action chamber was used to close the barrel to prevent it from splitting or springing open when the charge exploded. The pin fire system or rim fire cartridge was the other form of cartridge. In rim fire cartridge ignition is molded into the rim of the cartridge-case itself. This is ignited by a blow from the hammer against a protruding pin at the rear of the cartridge case. This ammunition is still in wide use in small caliber weapons. The invention of nitro-powder was also a great step in the development of weapons. This led to the development of semi-automatic weapons. Community shooting festivals have been held in some northern European cities, since the sixteenth century. The modern world wide interest in target shooting, however, dates back to second half of the nineteenth century. This was the result of technical advances in firearms. Shooting disciplines differ as to the distance, form of the target, the exact nature of the firearm and ammunition used, the position of the firer, and timing and number of the shots fired.

At that time shooting contests usually was one-shot competition fired at decorated wooden targets. These contests were customarily organized on the occasions of festival/ celebration and awards were generally of gold. In 1710, target shooting made its way to the United States and the events were called "turkey shoots", at first with food items being the prizes. In the 1790s, the U.S. developed match rifles with long barrel and double-set trigger features. By 1825, formal match shooting began and trapshooting contests followed five years later. Countries began forming their own national federations around the same time and eight nations formed the International Shooting Union or UIT (Union International De Tir). It was formed at Zurich in 1907 which, controlled international events. Shooting was an event at the 1896 Olympic Games in Athens and missed only the 1904 and 1928 Games. In the first Olympic Games only four shooting events

were introduced and in next Games in Paris, the number of events were increased to seven. Clay-pigeon shooting (individual), running deer shooting, single shot (individual), army rifle (team), pistol any target 50m., pistol or revolver (team) and automatic pistol or revolver (individual) were the events. Shooting was dropped in 1928 Games because of a controversy in the IOC about the definition of an “amateur” in the shooting. In the next Games, this matter was settled. The shooting again figured in 1936 Olympics and the I.O.C. decided that a shooter would be allowed to take part if he had not received a money prize for shooting since August 1, 1934.

DEVELOPMENT OF THE AIR PISTOL

By means of our attraction for weaponry we can mechanically use hobby shooting, target shooting or competition shooting as a course of accomplishing self-mastery. Air weapons sometimes called garden/hobby weapons, are in unpretentious class of weapon and chiefly practical for schooling new learners. Air weapons are trouble-free to preserve and are within the reach of most of the people as they are relatively cheap or and do not require a license. Formerly the coil/spring power-driven pistols were of the moving piston kind. In these types of air arms, a compressed spring drives a piston into a cylinder compressing the air volume and driving a pellet through the barrel. These kinds of air arms were not accurate as the movement of the spring results in recoil, which tends to throw the pistol off the aiming area. The manufacturer of the modern air pistol Feinwerkbau produced the moving piston air pistol, Model 65 and Model 80. These pistols had modifiable/changeable sight and thus very high accuracy. With the development of model 65 and 80 some modifications have taken place in accuracy and precision. Feinwerkbau Model 90 followed these well-liked models with an electronic trigger, which has consistent trigger weight at the time of firing. The formal type of competition was developed to take advantage of their incredible accuracy and precision. The trigger worked off a 15-volt battery.

The new generation of Pneumatic and Carbon dioxide propelled air pistols were inspired by the improved standard of shooting. The forerunner of the modern pistols Feinwerkbau produced the first CO₂ Match Pistol, Feinwerkbau Model 2. It had a cylinder below the barrel, which could be filled from a fire-extinguisher type cylinder and fitted to the pistol. This permitted the shooter to fire about 200 shots with no attempt of cocking and recoil. The additional benefit was the low center of gravity since the bulk of the pistol was below the shooter's hand. Walther simultaneously launched their CP2 a heavier pistol with good large sights. To fulfill the requirements of the rapid fire shooters Walther and Feinwerkbau launched 5 shot repeating CO₂ powered pistols. These pistols could not acquire much good turn since the set of laws did not permit their use in contests and were expensive training aids. New-fangled companies like Air Match and Pardini Fiochhi produced fine compressed air pistols and the Germans almost immediately had competition from the Italian firearm industry. Problems of inconsistency and unreliability overwhelmed these pistols and they were not very well liked. Therefore, Feinwerkbau presented their Model 100 and 102 sequence of pneumatic pistol with their well-known and legendary reliability.

Walther immediately reacted with a like model the LP1. The CO₂ pistols had a disadvantage of unreliable and unstable pressure at different levels of CO₂ gas. The subsequent new production of pistols the Feinwerkbau Model 10 and the Walther CP2 Match had a staging chamber built in to compensate for varying cylinder pressures. This improvement had taken one step higher with the Feinwerkbau Model 25 and the Walther renovation to a vertically mounted cylinder to avoid liquid CO₂ leaking into the chamber during firing. Though CO₂ pistols had comparatively small amount recoil they did have a small kick as the pellet was released from the barrel. An Austrian company, Steyr launched a model with a compensator. This attachment to the muzzle of the pistol vented the residual CO₂ upwards to counter-act the effects to the jump. These compensated Air Pistols were seen on all the ranges. Walther and Feinwerkbau offered their models CPM 1 and the Model C20 and C25 correspondingly, with compensators. One elite shooter had blamed his CO₂ pistol for one bad shot and this kicked off the hunt for a new propellant. Morini a Swiss company brings in a pistol powered by compressed air. The cylinder is charged with air at a pressure of 3000 psi. This required a valve that worked across a wide range of pressures and a vigorous device.

Nowadays, Morini and Hammerli, the renowned firearm manufacturers, offer their models of compressed air pistols. The Morini is an aluminium cylindered electronically fired air pistol while the Hammerli is a Hi-tech pistol with a cylinder of aluminium wrapped in Carbon Fiber. The Morini

works on compressed air only while the Hammerli can be charged with CO₂ or Air. The compressed air is usually provided through a diving bottle and is relatively easy to use. All these pistols offer an accurate, high precision piece of equipment, which will give years and years of trouble free service. They are cheap to shoot and will grind your skills to world beating standards. Steyr and Feinwerkbau have introduced their compressed air powered pistols and their designers are working hard on the next Models. The major forerunners of the modern pistols are Feinwerkbau, Steyr, Morini, Walther and Hammerli. By the advent of finals and the electronic scoring monitors used at world-class competitions, air pistol shooting has become something of a spectator sport. Some major changes have taken place in just the last two decades. In 1980, the UIT changed the men's competition from a 40 to a 60 shot format. Women's competition stayed at 40 shots and has remained there since. Also in 1980 the firing of sighter shots was changed, allowing unlimited shots- but all had to be taken before the first record shot. Now, according to ISSF rules, a ten-minute preparation period is given before the match starts. The duration of time a competitor has during a match has been shortened from two hours, to just one hour and forty-five minutes including sighter shots for men and for women the time is one hour and fifteen minutes for the 40 shot match including sighters.

CONCLUSION

The hypotheses of the beginning or origin of the shooting is not completely realistic, and it is not properly explored so far. One may agree to that the individuality of a discoverer will never be acknowledged for certain. But what one can be sure of is that when gunpowder appeared it revolutionized and modernized the art of conflict and warfare. The matchlock, wheel-lock, flintlock system helped shooting to evolve from 14th to 19th century and target shooting first began as an organized recreational activity in Great Britain in the middle of 19th century. Air pistol is the best option in shooting sports history for learning the basic skills of shooting accurately because, the lack of recoil means one gets to see exactly what effect his trigger release has on sight alignment. As far as participation is concerned, air pistol shooting sports is one of the largest in the shooting world.

DESIDERATA

To date only a handful of research work has been done in the field of shooting sports history. Beginning with the fourteenth century, the history of shooting sports needs to be analyzed from various angles. On the other hand, the newly added shooting events have to be analyzed from a critical perspective.

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Retrospective Study Of International Sports Diplomacy

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ABSTRACT

The objective of this study is to understand the relationship between politics and sports in context with mutual international relations. The study is based on the retrospective and descriptive approach to explore the ties between unique subjects and emergence of state-sponsored competitive sports system. Retrospectively, politics and sport have been bonded since ancient Greece engaged in competitive sports. Presently, sport has become a pervasive element in political arena, and increasingly being used as a political tool for new relationship, political socialization process, demonstration of national pride and identity. The modern Olympic Games are the most obvious example of global sports diplomacy.

KEYWORDS: Sports Diplomacy, International Relations, Olympic Games, Retrospective Study, Competitive Sports.

INTRODUCTION

It is an established fact that the relation of politics and sports on various occasions have been studied and presented number of developing functions of sport as vehicles through which political objectives might be realized. The intertwining of politics and sport at various level, led to the discussion on "sport as diplomatic vehicle" or "a political tool". And it is apparent of unreservedly linkage between occurrence in international relations and sports. Riordan once explained that sports is more than a simple hobby and it belongs to the State.

HISTORY OF SPORTS POLITICS

The rapport of sports and politics is as aged as their inception. Torres believes that the politics and cultural dimensions of sports are widely recognized and international sports are generally accepted as contributing to the dynamics of international relation. It is a recognized verity that general developments in international relations are reflected in political commotion adjacent international sports events. In the ancient world the ancient Olympics were turning point of the sports history and political element was very much part of these games. The organized sports were established by the ancient Greeks and ancient Olympics (Pan Hellenic athletic festivals) were the outcome. The winning in these games was decisive for establishment, power and prestige. Talented athletes produced and encouraged by the politicians bring credit to them. The Roman politicians however encouraged war oriented sports activities including gladiatorial contests to gain political advantages.

ROLE OF OLYMPICS

The French nobleman, Baron Pierre de Coubertin (1863-1937) revised modern Olympics and formed International Olympic Committee in 1894. First time in the history, the youth athletes of the world brought together for "*agon*" (contest) in 1986. Therefore, Coubertin laid the foundation of international relation through competitive sports. The Olympics Games radiate the mutuality innate in competitive sports and part of their plea resides precisely in what might be called the politics of the mutual recognition. Olympic Games are biggest events of the world where more than two hundreds countries participate in this multinational and multisport event. In London Olympic 2012 the two hundred and four countries were represented (by their athletes) and this number is more than the participants of United Nation (UN) proceedings. The founder of modern Olympic Games, Coubertin wanted these games to bring peace without infliction of politics and sports should promote international relationship among all the nations. There was a time when

International Olympic Committee (IOC) and League of the Nation were carrying same value system of internationalism and many politicians therefore advocating about the possibility to change IOC into a part of the League of the Nations and through which political problems should be eliminated from international sports and discord between nations.

POLITICAL RESENTMENT IN OLYMPICS

The mixing of sports and politics has a long tradition which dates all way back to the ancient Greeks. The indignant international political shadow also led to tragedies and tension in the past Olympics many times. The killing of protesting students in 1968 Olympics in Mexico city, kidnapping and killing of twelve Israeli Olympians by the Palestinian terrorists in Munich in 1972 Olympics. The politically motivated boycotts of 1980 Moscow games by USA in protest of the Soviet Union's invasion of Afghanistan, 1984 Los Angeles games by USSR, and 1976 Montreal Games by African and Arab countries also hampered the original goal of Olympic movement.

Germany had a clear policy of elite sport; this responsibility was clearly political to lead sport as a way to present their culture to the world. In modern Olympics history the most controversial game were the 1936 Berlin Games where Hitler tried to use the game as propaganda for Nazi ideology. Hitler also made an effort to use the Olympic Games to show the world a peaceful Germany and for party line he encouraged press for international attention to Berlin Olympics. Finishing first in the medal table in Berlin Olympics was sufficient to promote Nazi superiority among nations. Spain was also prevented from participating to the Berlin Olympics and nationalism approach was touched of the sports loving country.

SPORTS AND INTERNATIONAL RELATION

There is a long list of references of political negotiation and cooperation through sports. As Strenk elaborated, that sport can be a very useful political and diplomatic tool in gaining prestige, protesting various situations, spreading propagandas and recognizing or isolating another nation. There is long history of relation of sports and politics which dates all the way back to the ancient Greeks. Particularly, after World War I many governments used international sport events for diplomacy and foreign policies were framed keeping in view the above references. Coubertin, after making tour in west and Europe he realized sport can be major source for international cooperation, understanding, and mutual respect and thereby to achieve world peace. The sportspersons are official representatives of national culture. The terms of honor, reputation and identity are used to promote national pride for their national teams.

CONCLUSION

Baron Pierre de Coubertin believed that sports will influence politics in context with international relation but in fact it had further politicized sports. If the sport was going to influence politics, then the interaction would not remain a one-way street. The IOC's very claims of internationalism, moralism and independence thrust it squarely into the realm of politics, Andrew remarks. There is the long-term, structural relationship existing between sports and political agencies at the local, regional and international levels. And the States use sportsmen influence to encourage national unity develop and embellish their external prestige and sports plays this role for a majority of great political power. The activities of politicians and diplomats in relation to international sports reflect the general characteristics of diplomacy and international politics in the post-Cold War era. The international sports need the interest and support of politicians, but not their interference.

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Body Proportion And Physique Of Collegiate Male Freestyle Sprint Swimmers

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ABSTRACT

OBJECTIVE: Individual physique and body proportion or composition has been discovered to impose constraints upon capacity for optimal performance in sports. This study was carried out to determine the body composition (%body fat, lean body mass) and somatotype characteristics of the collegiate male swimmers in Kerala and compare it with their overseas counterparts.

METHODS: 24 male collegiate swimmers from various sports hostels in Kerala were chosen for the investigation. Their mean age was 18.9 (+/-1.5) years, height 169.1 (+/- 5.73) cm and weight 65.4 (+/- 5.74) kg. Anthropometric measurements included triceps, subscapular, suprailiac, abdomen and calf skinfolds, biceps and calf circumferences and humerus and femur breadths. The body fat percentage was calculated using the formula prescribed by Faulkner. The somatotype of the subjects was calculated by the Heath and Carter method. **RESULTS:** The swimmers under this study have a body fat percentage of 12.3 (+/-1.15) %. Their mean Lean Body Weight (LBW) was 57.4 (+/- 3.65) kg and Total Weight of Fat was 8.03 (+/- 1.01) kg. Regarding the somatotype, they fell into the somatotype category of balanced mesomorphs with a value of 3.1 – 4.5 – 2.6. **CONCLUSIONS:** Mesomorphic component is highly developed which confirms the general notion that mesomorphs make good swimmers because they tend to be muscular, and therefore capable of sprinting through a very dense medium of water. Similarly, the moderate fat adiposity (12.3%) under the subcutaneous skin may provide adequate buoyancy that will facilitate greater floatation during freestyle swimming.

INTRODUCTION

In the endeavor to achieve excellence in sport, all of the possible concomitants of performance have been subject to scientific research. Modern sport science is characterized by the purposefulness of its endeavor to improve elite athletes and to discover talents as precisely as possible. There is evidence to support the concept that an individual's physique greatly limits or enhances successful participation in physical activity (Wilmore J & Haskell, 1972; Fahey et al., 1975; Wickkiser & Kelly, 1975; Pipes, 1977). Elite and world class athletes have different physiques than individuals in the non athletic population (Tanner, 1964). The body composition and anthropometry of elite athletes has been the subject of much research. The practicing athletes might be expected to exhibit structural and functional characteristics that are specifically favorable for the sport and thus separate him from the general population and athletes involved in other sports. Such differences in body physique might reflect (a) genetic characteristics that have been selective in determining athletic pursuit and (b) changes due to the conditioning effect of high level of training.

Specific physique or morphological features play a major role, arguably critical role in competition success. The size, shape and proportions of athletes are important considerations in player performance and better the performance more critical the relationship (Toriola et al., 1987). The morphologic classification of men has a scientific and general interest since the times of Hypocrates, that is, around 400 B.C. Later, other physical descriptions were elaborated and it was denominated somatotype by Sheldon and colleagues in 1940, Parnell in 1954, and that

classification was reviewed and modified by Heath and Carter in 1967 (Nevill et al. 2004). The somatotype consists of three components: the endomorphy, which is the greasy component indicating the fat content of the body; the mesomorphy, which is related to the muscular component and presents the solidity and “square” body aspect, and the ectomorphy in which it predominates the linearity and the fragility of the body (Powers SK, Howley ET, 2000).

Swimming performance depends on optimizing propulsion and minimizing the opposing factor—drag (Berger et al. 1997, Chatard et al. 1990). Factors related to minimizing drag include the anthropometric characteristics and body composition. Swimmer’s physical characteristics have been examined to determine the characteristics of successful sprint and endurance swimmers (Lavoie, J.M., and R.R. Montpetit 1986, Leone et al. 2002) in order to assess the relative importance of specific characteristics to performance (Sharp et al., 1982, Collet et al., 1997).

Despite the game’s world-wide popularity, there have been few other investigations of anthropometric and physiological characteristics of swimmers: most notably, recent data are lacking in India. Hence, the present study is an attempt to analyse several anthropometric variables with a view to establishing the current morphological characteristics of collegiate male freestyle swimmers from Kerala state, India, and compare the data with their overseas counterparts.

MATERIAL AND METHODS

Subjects:- 24 male collegiate swimmers from various sports hostels in Kerala, India, were randomly selected for the purpose of the study. Their average age (SD) was 18.9 (+/-1.47) years, height 169.5 (+/-6.31) cm and weight 65.4 (+/-4.41) kg. The subjects have been undergoing training regularly and have participated in university, state and national championships.

Procedures:- A Harpenden skinfold caliper (British Indicators, St Albans, Hertfordshire, UK) with a precision of 0.1 mm was used to collect skinfold measurements to the nearest 0.2 mm two seconds after the full pressure of the caliper jaws had been applied; the skinfold value was taken as the average of 3 skinfold measurements separated by at least 1 minute to avoid tissue compression. The triceps skinfold was taken vertically from the back of the arm, at the mid-point between the acromion and olecranon processes. The subscapular skinfold was measured at an angle of 45 degrees to the vertical, running laterally and downward in the natural cleavage line of the skin at the inferior angle of the scapula. The suprailiac skinfold was obtained superior to the iliac crest on the mid-axillary line. For calf skinfold, the subject sat with legs slightly spread while the vertical skinfold on the medial side of the leg at the largest circumference on the posterior midline of gastrocnemius was measured. A vertical fold is raised approximately in the midline of the belly of the Rectus Abdominis from the right hand side of the mid point of the navel for measuring the abdominal skinfold. (Norton K et al.).

Femur epicondylar breadth was measured while the participants were sitting on a table with their knees bent at right angles. The width across the outermost parts of the lower end of the femur was recorded. Humerus epicondylar breadth was measured across the outermost parts of the lower end of the humerus. The following formulas were used to assess the body composition of the subjects.

$$\% \text{ Body Fat or PBF} = \frac{(\text{triceps} + \text{subscapular} + \text{suprailiac} + \text{abdominal skinfolds} \times 0.153) + 5.783}{\text{Weight}} \quad (\text{Faulkner J.A. (1968)})$$

$$\text{Total Weight of Fat or TWF (kg)} = \frac{(\text{Weight} \times \text{percent of fat})}{100}$$

$$\text{Lean Body Weight or LBW (kg)} = (\text{Total Body Weight} - \text{Total Weight of Fat})$$

The method of Heath and Carter, which is based on the Sheldon’s somatotype classification, was applied to determine the somatotype characteristics of the subjects (Heath B and Carter J, 1967).

STATISTICAL ANALYSIS

Basic statistical descriptive parameters such as mean and standard deviation was calculated for the analysis of the data.

RESULTS

Table 1. Various physical parameters and anthropometric characteristics of the subjects.

	MIN	MAX	AM	SD
Age (yrs) 17		24	18.9	1.50
Height (cm) 158		180	169.1	5.73
Weight (kg) 57		74.5	65.4	5.74
Biceps Girth (cm) 26.5		32.0	28.9	1.34
Calf Girth (cm) 29.5		35.0	33.4	1.62
Humerus Breadth (cm) 7.20		6.75	0.29	6.40
Femur Breadth (cm) 8.20		10.3	9.34	0.62
Triceps Skinfold (mm) 12.3		10.6	1.50	8.00
Sub-scapular Skinfold (mm) 14.5		10.9	2.31	7.70
Supra-iliac Skinfold (mm) 8.00		14.3	11.2	2.29
Abdominal Skinfold (mm) 7.1		11.3	9.82	1.86
Calf Skinfold (mm) 5.3		10.4	7.67	1.79

Various physical parameters of the subjects are depicted in table 1. The average height of the swimmers is 169.1cm (+/-5.73) and their mean weight 65.4kg (+/-5.74). Calf circumference (33.4+/-1.62cm) is found to be greater than biceps circumference (28.9+/-1.34cm). Regarding bicondilar breadths Femur exhibited higher value (9.34+/-0.62cm) than humerus (6.75+/-0.29cm). The results of the study also revealed that among all skinfold measurements calf skinfold is the lowest with a value of 7.67mm (+/-1.79) and highest was supra-iliac skinfold with a value of 11.2mm (+/-2.29).

Table - 2. Different components of somatotype and Body Composition of subjects.

	MIN	MAX	AM	SD
Endomorphy 2.0		4.5	3.1	0.57
Mesomorphy 3.5		6.0	4.5	0.67
Ectomorphy 2.0		4.0	2.6	0.70
PBF (%)	10.5	13.9	12.3	1.15
Total Weight of Fat (kg) 9.64		8.03	1.01	7.20
Lean Body Mass (%) 86.1		89.5	87.7	1.09
Lean Body Weight (kg) 65.4		57.4	3.65	50.3
BMI (kg/m ²) 20.1		25.4	22.9	1.17

Table 2 represents the values of somatotype and body composition of the subjects. It reveals that the adolescent male freestyle swimmers under this study fall into the somatotype category of balanced mesomorphs with a score of 3.1-4.5-2.6. Mesomorphic component is found to be highly developed in them while endomorphy is greater than ectomorphic component.

Regarding body composition, their average percent body fat (PBF) was 12.3% (+/-1.15) indicating a moderate adiposity in the subjects. Their average total weight of fat (TWF) is 8.03kg (+/-1.01) while their average percent lean body mass (%LBM) is 87.7% (+/-1.09). It was also observed that the average lean body weight of the male freestyle swimmers under this investigation was 57.4 (+/-3.65)kg.

Conclusions and Discussions

The somatotype category of the present study swimmers are balanced mesomorphs which indicate that mesomorphic component is highly developed in them. This confirms the general notion that mesomorphs make good swimmers because they tend to be muscular, and therefore capable of sprinting through a very dense medium of water.

With regard to the body composition it can be observed that they possessed moderate quantity of fat adiposity. This layer of fat under the subcutaneous skin may provide adequate buoyancy that will facilitate greater floatation during freestyle swimming. Their body fat percentage of the subjects is almost similar to the finding of another study in which elite male swimmers who were members of the Canadian National or Youth National Teams were found to possess %body fat of 11.9% (Gregory et al. 2006). In contrary to this higher level of body fat% was reported for competitive swimmers studied by Lowentsein et al. (1994). Their mean fat% was 15%.

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Efficacy Of Systematic Hockey Academy Training Program On Total Cholesterol And High Density Lipoprotein Among Boys Of Different Age Groups

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ABSTRACT

The underlying principle of this study was to assess the effectiveness of systematic hockey academy training program in transforming the total cholesterol and HDL-c among boys of different age groups. For this purpose, a total of twenty-two boys from RDT Hockey Academy, Anantapur, Andhra Pradesh, were considered. The selected subjects were segregated into two age categories as juniors (11 to 14 years) and seniors (15 to 18 years). The number of boys in the junior category were fourteen (n=14) and in seniors were eight (n=8). The training regimen lasted for one year. The total cholesterol and HDL-c were assessed prior to and immediately after the systematic hockey academy training program. Two-way analysis of variance with repeated measures on last factor was employed to establish degree of significant modification on total cholesterol and HDL-c and to ascertain the deviation between age categories. The findings of the study reveals that irrespective of age categories one year of systematic hockey academy training program had an effectiveness of increasing HDL-c by 14.91% and decreasing total cholesterol by 33.16%. Furthermore, the study demonstrates that there is a deviation of 5.41% and 9.54% on total cholesterol and HDL-c respectively between age categories. These findings suggest that the systematic hockey academy training program has a statistically significant influence in transformation of total cholesterol and HDL-c. The findings also suggest that there is a significant difference between age categories on total cholesterol and HDL-c of the boys confined to this study.

KeyWords:Lipids,BiochemicalVariables,Training

Introduction

Hockey can take its history back to early Egyptians, who first took a stick to a ball. Today's elite hockey players require exceptional skills, and physical attributes such as great endurance, running speed and hitting power and agility to keep pace with the fast moving game, as this team-based sport is played on artificial turf or grass, depending on the competition level. At higher levels of competition (*i.e. state and national*), training and competition may continue throughout most of the year.

Hockey is mainly an aerobic sport with short bursts of high intensity sprinting. Energy requirements for hockey players vary greatly depending on the standard of play. Overall, the training diet for a hockey player needs to be based on nutrient-rich sources of carbohydrate (*cereals, fruit, vegetables, flavoured yoghurt etc*), provide moderate levels of protein and smaller amounts of nutrient-poor carbohydrate (*sugar, cordial, soft drink, lollies, cakes etc.*) and fat.

Meeting energy needs is the first nutrition priority for athletes. Achieving energy balance is essential for the maintenance of lean tissue mass, immune and reproductive function, and optimum athletic performance. Energy balance is defined as a state when energy intake (*the sum of energy from food, fluids, and supplement products*) equals energy expenditure (the sum of energy expended as basal metabolism, the thermic effect of food, and any voluntary physical activity) (Swinburn & Ravussin, 1993). Inadequate energy intake relative to energy expenditure compromises performance and the benefits associated with training. With limited energy intake, fat and lean tissue mass will be used by the body for fuel. Loss of muscle results in the loss of

strength and endurance. In addition, chronically low energy intake often results in poor nutrient intake, particularly of the micronutrients.

Energy expenditure is influenced by heredity, age, sex, body size, fat-free mass, and the intensity, frequency, and duration of exercise. For athletes, the recommendation is made to evaluate the kind of exercise performed for its intensity, frequency, and duration, and then to add this increment to the energy needed for normal daily activity (Montoye, Kemper, Saris & Washburn, 1996; Manore & Thompson, 2000; Hawley & Burke, 1998).

The fundamental differences between an athlete's diet and that of the general population are that athletes require additional fluid to cover sweat losses and additional energy to fuel physical activity.

Weight gain can be accomplished by the incorporation of additional energy into the diet. However, weight loss is somewhat more problematic, as diminished energy intake can compromise nutrient intake and exercise performance while decreasing both body fat and muscle mass (Thompson & Manore, 2000; Manore, 1999).

Low body fat levels are an advantage to assist with agility and speed, hence hockey players need to keep body fat levels under control. This is especially an issue during the off-season, where there can be an energy imbalance when activity levels drop. This can be resolved by decreasing energy intake over this time or increasing the amount of exercise undertaken by playing another sport or undertaking some specific fitness training.

Lipids have important beneficial biological functions. These include usage of triglycerides for energy production, fat storage in adipose tissues, and usage of cholesterol as a component in phospholipids of cellular membranes or in the synthesis of steroid hormones (Heitkamp, Wegler, Brehme, *et al.* 2008; Kelley & Kelley, 2009; Altena, Michaelson, Ball, Guilford & Thomas, 2006). Elevated plasma cholesterol concentrations have been implicated in the development of coronary artery disease (Kelley & Kelley, 2009; Halverstadt, Phares, Wilund, *et al.* 2007). Periodical screening of these health-related variables of the players can give precious cues about their health, metabolic and cardiovascular status during training at various stages of growth and development.

In view of the fact that the studies on the lipid and lipoprotein profiles of young hockey players particularly in relation to training, growth and development are inadequate in India, this study was designed by us to investigate the effect of a training program on total cholesterol and high density lipoprotein of young male hockey players of different age groups.

Methodology

Subjects and Variables

To achieve the purpose of this study, a total of twenty-two boys from RDT Hockey Academy, Anantapur, Andhra Pradesh, were considered. The selected subjects were segregated into two age categories as juniors (11 to 14 years) and seniors (15 to 18 years). The number of boys in the junior category were fourteen (n=14) and in seniors were eight (n=8). These subjects were from below poverty line families in rural and suburbs surroundings. In the RDT Hockey Academy, Anantapur, the students were provided with free boarding and lodging, so that they can meet out the energy requirements for their optimal growth and hockey playing ability.

The criterion variables chosen for this study were total cholesterol and high density lipoprotein, and they were assessed using standard procedures, prior to and immediately after the training regimen for one-year. The instruments namely: research centrifuge, pipette, spectrophotometer were for testing the criterion variables were standard and reliable as they were purchased from the reputed companies, and the reagents utilized were bought from Span Diagnostics Ltd, India.

Training Protocol

The subjects of both the age categories confined to this study underwent training regimen consisting two sessions a day, seven days a week for forty-eight weeks. Pre-season training starts with conditioning and strength training, moving on to skill training as the season approaches. Match practice and fitness are improved moving into the season. There are usually 3-4 hockey skills training sessions per week with a game on the weekend. Training sessions are generally

1-2 hours in length with the intensity of sessions reducing towards the end of the week in preparation for competition. Cross training sessions such as resistance training, flexibility, speed and endurance may form parts of these sessions or extra training throughout the week. The usual competitive season involves one game per week on the weekend.

Experimental Design and Statistical Procedure

The experimental design used for the present study was stratified sampling involving two groups of fourteen and eight young male hockey players. Two-way analysis of variance with repeated measures on last factor was employed to establish degree of significant modification on total cholesterol and HDL-c and to ascertain the deviation between age categories. The level of significance was accepted at $P < 0.05$ in all the cases.

Results

The descriptive analysis of data collected on total cholesterol and high density lipoprotein cholesterol prior to and immediately after forty-eight weeks of systematic hockey training is presented in table 1.

Table 1

Computation of Mean and Standard Deviation on Total Cholesterol and High Density Lipoprotein

Variables	Groups	Pretest		Posttest	
			σ		σ
Total cholesterol	Juniors	103.757	12.924	140.193	19.136
	Seniors	102.688	10.242	133.188	11.955
High density lipoprotein cholesterol	Juniors	53.549	11.303	47.506	10.199
	Seniors	57.453	6.028	45.486	8.995

Two-way analysis of variance with repeated measures on last factor was employed to establish degree of significant modification as the result of experimentation and to ascertain the deviation between age categories on total cholesterol and HDL-c and it is presented in table 2 and 3 respectively.

Table2

Analysis of Variance with Repeated Measures on Last Factor on Total Cholesterol

Source	Sum of Squares	df	Mean Square	F
GROUPS	165.978	1	165.978	0.427
Error	7766.705	20	388.335	
TESTS	11404.629	1	11404.629	253.420*
GROUPS x TESTS	89.683	1	89.683	1.993
Error	900.056	20	45.003	

* Significant at .05 level of confidence

Table value required for significance at 0.05 level of confidence for the df of 1 and 20 is 4.35

Table 2 reveals that the juniors and seniors didn't differ significantly on total cholesterol irrespective of testing conditions, since the obtained 'F' ratio of 0.427 is lesser than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

However, the findings shows that there is a significant magnification on total cholesterol irrespective of groups, as the obtained 'F' ratio of 253.420 is greater than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

The first order interaction of groups and testing conditions is insignificant as the obtained 'F' ratio of 1.993 is lesser than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

Table-3
Analysis of Variance with Repeated Measures on Last Factor
on High Density Lipoprotein Cholesterol

Source	Sum of Squares	df	Mean Square	F
GROUPS	9.039	1	9.039	0.050
Error	3587.853	20	179.393	
TESTS	825.562	1	825.562	67.168*
GROUPS TESTS	89.311	1	89.311	7.266*
Error	245.820	20	12.291	

* Significant at .05 level of confidence

Table value required for significance at 0.05 level of confidence for the df of 1 and 20 is 4.35

Table 3 reveals that the juniors and seniors didn't differ significantly on high density lipoprotein cholesterol irrespective of testing conditions, since the obtained 'F' ratio of 0.050 is lesser than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

However, the findings shows that there is a significant reduction on high density lipoprotein cholesterol irrespective of groups, as the obtained 'F' ratio of 67.168 is greater than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

The first order interaction of groups and testing conditions is significant as the obtained 'F' ratio of 7.266 is greater than the required table value of 4.35 for the degrees of freedom 1 and 20 at 0.05 level of confidence.

Discussion

Lipids and lipoprotein profiles indicate the cardiovascular and metabolic status of athletes (Kelley & Kelley, 2009; Mazloom, Salehi & Eftekhari, 2008). Activity levels have significant impacts on the lipids and lipoprotein levels of athletes (Kelley & Kelley, 2009).

Exercise training is the foremost reason for the reduction in total cholesterol, triglyceride and LDL-C, and elevation in HDL-C (Heitkamp, Wegler & Brehme, et al., 2008; Kelley & Kelley, 2009; Wilmore & Costill, 2005). However, diet, energy expenditure (*which is influenced by heredity, age, sex, body size, fat-free mass, and the intensity, frequency, and duration of exercise*) and growth & development plays a vital role in the concentration of serum lipids and lipoproteins.

We found that there is no significant difference between two different age groups (*juniors & seniors*) on total cholesterol and high density lipoprotein cholesterol, while statistically considerable changes have taken place on total cholesterol and high density lipoprotein cholesterol as a result of systematic hockey academy training.

Armstrong & Simons-Morton, 1994, reviewed some of the cross-sectional studies that enumerates children and adolescents who are physically active, or whose aerobic fitness is high, have a more favorable blood lipid profile than their sedentary, or less fit, peers. This difference is particularly apparent in high-density lipoprotein cholesterol (*HDL-C = the "good" cholesterol*), which is higher in the active groups. In most of the cross-sectional studies it is impossible to separate a high activity level from a high fitness level. Training studies of several weeks' duration have failed to show any beneficial effect on the blood lipid profile in healthy children or adolescents.

The findings of the study is also in par with the observations of Manna, Khanna and Dhara (2010) that no significant change on total cholesterol and high density lipoprotein.

Conclusions

Training effects were reflected on various parameters including lipid profile of different age group hockey players. Regular monitoring of lipids and lipoproteins profiles of soccer players is essential to optimize their health status which has direct effect on performance of the players. The unique profile of age-related changes should be taken into consideration while administering training to the players. This would enable coaches to assess the current status of an athlete and the degree of training adaptability and to provide an opportunity to modify the training schedule accordingly to achieve the desired performance.

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Effect Of The Pec India Programme On Cognitive Development Of Primary School Children

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Abstract

The PEC India cards is an outcome of the collaborative efforts of the Governments of India and the United Kingdom to strengthen the delivery of the Primary physical education Curriculum under the International Inspiration. In August 2009 as a part of the International Inspiration that is the International social legacy of the London 2012 Olympic game & Paralympic games.

A sample of 100 children aged 5-7 years studying in class I at the Apeejay Public School Pitampura New Delhi were selected as the subjects for this study. The subjects participated in the PEC India programme from August 2009-March 2010. Prior to the start of the PEC programme the children were made to go through the pre - test i.e. TMT (Trail Making Test) I and II and finally after 6 months of going through the PEC programme again the post test was taken.

The data was examined by applying Analysis of Covariance (ANCOVA) & Analysis of Variance (ANOVA) with regards to experimental group and control group to find out the significant difference among the means.

From the findings it was evident that the treatment (PEC India Program) given to experimental group was found to enhance the cognitive development of the children. Education through sports is the latest watchword in the field of school teaching.

Introduction:

The Charter of Physical Education and Sport adopted by the UNESCO in 1978 states "the practice of physical education and sport is a fundamental human right for all. A child's right to play is enshrined in article 31 of the convention on the rights of the child, which recognizes "the right of the child to rest and leisure, to engage in play and recreation activities appropriate to the age of the child". Through the medium of physical education a holistic development of the individual takes place. The physical, mental, emotional and social development takes place through practical oriented activities. Research has proved that physical education improves the academic performance of children. The PEC India cards is an outcome of the collaborative efforts of the Governments of India and the United Kingdom to strengthen the delivery of the Primary physical education Curriculum under the International Inspiration. In August 2009 as a part of the International Inspiration that is the International social legacy of the London 2012 Olympic game & Paralympic games. These are cards for the Primary school children (classes I to V) which can be effectively used by the Primary class room teachers. Children learn best through the play way method and the PEC India has proved that children have improved in all aspects of their personality development i.e cognitive, affective and psychomotor through participation in the program.

Methodology

A sample of 100 children aged 5-7 years studying in class I at the Appejay Public School Pitampura New Delhi were selected as the subjects for this study. The subjects participated in the PEC India programme from August 2009-March 2010. Prior to the start of the PEC programme the children were made to go through the pre - test i.e. TMT (Trail Making Test) I and II and finally after 6 months of going through the PEC programme again a post test was taken. The PEC India programme consists of activities which focus on agility, flexibility and co- ordination. Twenty cards for each class i.e. class I-V have been prepared, piloted and launched in many parts of the country. The highlights of these cards are that they are linked to the CBSE curriculum and make subjects like maths, science and English come alive on the play field. It is well known that little children enjoy play and through the play way method formal learning can also take place

Results

The data was examined by applying Analysis of Covariance (ANCOVA) & Analysis of Variance (ANOVA) with regards to experimental group and control group to find out the significant difference among the means. In case of significant result post-hoc test (LSD test) was applied in order to determine the significance difference between the paired means. Since random group design was employed in the study as the subjects of each group were selected randomly. The level of significance to check the F-value was set at 0.05.

Analysis of variance for Experimental and Control Group of Cognitive Development are presented in table-1.

Table -1:ANCOVA for Experimental and Control Group of Cognitive Development

		Sum of Squares	df	Mean Square	F-Value	Sig.
Pre test	Between Groups	101.46	1	101.46	0.259	0.611
	Within Groups	240725.623	614	392.061		
Post test	Between Groups	2034465.58	1	2034465.58	6290.3*	0.00
	Within Groups	198584.39	614	323.42		

* Significant at 0.05 level of significance

From Table-1 it is evident that the Initial Conditions of experimental and control groups was same as there was no significant change found, as obtained F- value 0.259 found less than tabulated F-value 3.85, at 0.05 level of significance. After 28 weeks of training, a significant change was found between the means of experimental and control groups, as calculated F-value 6290.3 was higher than tabulated F-value 3.85 required to be significant at 0.05 level of significance.

The results pertaining to the analysis of covariance done for experimental group and control group for cognitive development of primary school children are presented in Table 2.

Table -2:Analysis of covariance for the Experimental Group and the Control Group of Cognitive Development

Source of Variance	df	SS	MSS	F-Value	Remarks
Training	1	2045881.6	2045881.6	8103.5	(P<0.05)
Error	613	154763.3	252.5		

* Significant at 0.05 level of significance, Tabulated value of (1,613) is 3.85

SS=Sum square due to error, MSS=Mean Sum of square, F=F-ratio value

From Table-2 it is evident that the adjusted F-ratio value is 8103.5 which was found greater than tabulated F-ratio value (3.85) significant at 0.05 level. It indicates that mean score of cognitive development of subjects belonging to experimental group and control group differ significantly. As the F-ratio was found significant in the case of cognitive development, the significant difference (LSD) post-hoc test was applied to test the significant difference between paired means on cognitive development that has been presented in table No. 3

Table -3:Paired adjusted final means and differences between means among the Experimental Group and Control Group of Cognitive Development

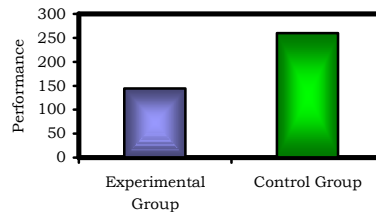
Experimental Group	Control Group	Mean Difference	Critical Difference at 5% level
144.56	259.85	115.28	2.51

* Significant at 0.05 level of significance

It is evident from Table-3 that mean difference of control group and experimental group was found to be significant at 0.05 levels. As the post mean difference was found to be significant i.e. 115.28, which is greater than the critical difference value 2.51 at 0.05 levels. It revealed from the above table-3 that PEC training program was effective to produce significant improvement in Cognitive development of experimental group. The graphical representation on paired adjusted means of the experimental group and the control group are shown in Figure 1.

Figure: 1

Graphical representation on paired adjusted means of Experimental Group and the Control Group of Cognitive Development



Discussion

From the findings it was evident that the treatment (PEC India Program) given to experimental group was found to enhance the cognitive development of the children. Cognitive development includes memory, concentration, attention, perception, imagination and creativity. Sports and physical education play a crucial role in all round development of children. Education through sports is the latest watchword in the field of school teaching. Children and play go together. Therefore physical education cards were introduced to bring the new teaching approach and activities for primary level children. Significant changes in cognitive development are because physical education cards allow children to use their creativity while developing their imagination, dexterity, and physical, cognitive, emotional strength, ability to sort, order and classify objects according to color, shape or size and develop concepts of quantity, distance, area, time, weight, length. It helps children adjust to the school setting and even to enhance children's learning readiness, learning behaviors, and problem-solving skills, begins to think in a more co-ordinated way, and can hold more than one point of view at a time, learns about space, shape and structures and can also experience matching and sorting as well as being encouraged to think about size and develop level of coordination that allows them to jump, turn, make gestures or simply sit quietly. The findings of the study is in consonance with findings of Bergen and Mauer (2000) who found that children who had high levels of play with literacy materials in preschool were likely to be spontaneous readers of place signs and have greater pretend verbalizations in a "town-building" activity at age five. A number of studies revealed that students participating in extracurricular activities did better academically than students who did not participate (Marsh & Kleitman, 2002).

In sum, there is a growing body of evidence supporting the many connections between cognitive competence and play. If children lack opportunities to experience such as play, their long term capacities related to metacognition, problem solving and social cognition as well as to academic areas such as literacy, mathematics and science may be diminished. These complex and multidimensional skills involving many areas of brain are most likely to thrive in atmosphere rich in Physical education cards.

Tools

The TMT (Trail Making Test) which consists of Test A and Test B was used for collecting the data.

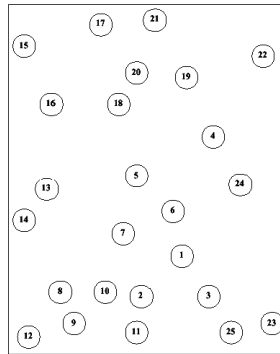
Results for both TMT A and B are reported as the number of seconds required to complete the task; therefore, higher scores reveal greater impairment.

Average Deficient Rule of Thumb

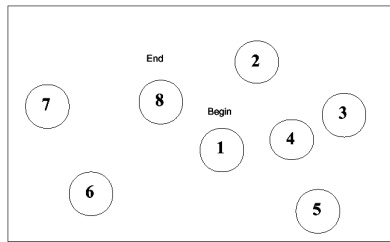
Trail A 29 seconds > 78 seconds Most in 90 seconds

Trail B 75 seconds > 273 seconds Most in 3 minutes

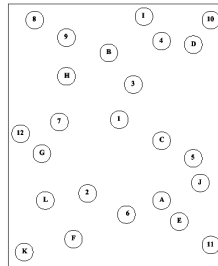
Trail Making Test Part A



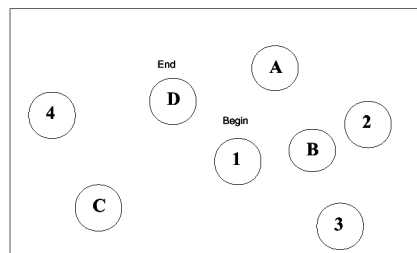
Student's Name: Date:
Trail Making Test Part A – SAMPLE



Trail Making Test Part B



Student's Name: Date:
Trail Making Test Part B –



Conclusions:The PEC (India) programme that was given to the students had a positive effect on their cognitive development .The slogan “play while you learn and learn while you play” is a very effective way of teaching children ..Hence ,it is concluded that physical education makes immense contributions to the mental development of children.

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A Comparative Study On Physical Fitness Among The Government And Private High School Students Of Yadgir Taluka

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ABSTRACT

Physical fitness is one the facts of a person's all round harmonious development .Physical fitness is the cultural phenomenon of great complexity and magnitude, which is historically, preconditioned level of health and comprehensive development of a person. The aim of the study is A comprehensive study on physical fitness among the government and private high school students of yadgir taluka. For this study experimental method and test of physical fitness(SPEED(50-YARD DASH),ENDURANCE(12-MINTUES RUN-WALK)STRENGTH(STANDING BOARD JUMP), AGILITY(SHUTTLE RUN TEST),FLEXIBILITY(SCOTT FRENCH BOBBING TEST)is applied to high school students of yadgir taluka to collect the data. 50 high school students from govt and 50 private high school students from yadgir taluka selected were selected randomly for the study. the age group of the subjects was between 22 to 25 years.the result reveals that over all physical fitness performance of govt school students was higher than the private high school students of yadgir taluka.

INTRODUCTION

"A sound mind in a sound body" is a good mean that has stood the best test of time. There have been a number of studies tending to shows that mind and body are inseparable. Ancient thinkers of greek, Aristotle, combined moral intellectual and physical excellence. At Athens an uneducated body was a much a disgrace as an untrained mind.Physical fitness is one of facts of a person's all round harmonious development .Physical fitness is the cultural phenomenon of great complexity and magnitude, which is historically, preconditioned level of health and comprehensive development of a person. Physical fitness adds grace to the young,wealth to the poor, ornament to rich acts as a consoling factor to the old. The place of physical fitness in any society reflects something of that society's characteristics. Today almost every country in the world gives importance to development of sports in order to improve the nation's health and for the well being of the future generation.Every individual must know the importance of physical fitness in other words one must have a fundamental knowledge of anatomy and physiology. This fundamental knowledge enables person to understand physical fitness. Physical fitness is the capacity of a person to function steadily and smoothly when a situation arise.Physical fitness is the ability to carry our daily task with vigor and alertness without undue fatigue and with ample to energy in leisure time pursuits and to meet the above average physical strength, stress, muscular, endurance and circulatory endurance, muscular power, agility, speed and flexibility and added to compose physical fitness. Then kinetic, arm-eye co-ordination is needed for general motor ability.

Physical fitness is generally judged by the performance and this performance is based on composite of many factors. The following factors have generally been conceded is being most commonly mentioned component of physical fitness. Higher level of physical fitness and physical fitness is fundamental to success in all types of games and sports. To become a top-level performance in any games and sports, it is essential the he should have a sound fit body. It is considered is a matter of fact that when all other contributing factors are considered the level of fitness or physical fitness shall definitely lead to improvement in the performance level of of the sportsman participant in a variety of games and sports. The activities such is running, jumping, leaping are considered is fundamental human movements but at the same time are considered

basis to all types of games and sports. there is no such game, which does not involve activities like running, jumping, leaping. Thus, it automatically becomes clear that the degree to a particular game or sports training, excessive concentration would be given on the fitness because high level of fitness would be more helpful in emergency conditions. Physical fitness is a positive and dynamic quality, which extends from birth and death. Since an individual is indivisible and full of totality his all-discrete parts will be affected by all the phases of human existence.

STATEMENT OF THE PROBLEM

The purpose of a study is A comparative study of physical fitness among the government and private high school students of yadgir taluka.

HYPOTHESIS

There may be differences in physical fitness between govt and private secondary school students.

SIGNIFANCE OF THE STUDY

1. This study will help to compare the order of dominance components of physical fitness of govt and private yadgir students.
2. This study will help to physical education teachers for picking up talented person for training them according to requirements.
3. It may be helping in determining the student's weakness in a particular component.

METHODOLOGY

The researcher has used experimental method to compare the physical fitness between the govt and private high school students. For this experimental method and test of physical fitness is applied to high school students of yadgir taluka to collect the data. 50 high school students from govt and 50 private high school students from yadgir taluka were selected randomly for the study

SPEED (50-YARD DASH)

ENDURANCE (12-MINTUES RUN-WALK)

STRENGTH (STANDING BOARD JUMP)

AGILITY (SHUTTLE RUN TEST)

FLEXIBILITY (SCOTT FRENCH BOBBING TEST)

RESULT AND DISCUSSION OF THE STUDY

TABLE

PHYSICAL FITNESS PERFORMANCE OF HIGH SCHOOLS

HIGH SCHOOLS		STRENGT H	SPEED	AGILITY	ENDURANCE	FLEXIBILITY
GOVT STUDENTS	M	1.91	8.70	12.32	2114.2	11.68
	SD	0.34	1.20	1.81	420.27	2.56
PRIVATE STUDENTS	M	1.79	9.01	14.93	2012.2	10.69
	SD	0.29	1.61	1.47	299.84	2.19
t-VALUE		1.90	1.08	7.88**	1.38	2.96**

** Significance at 0.01 level

Results present in the above table and graphs represent the scores of govt and private high school students in of physical fitness components it can be observed that, strength scores of govt students are higher(1.91)than private high school students (1.79). the 't' value (1.90)were not significant. There is a significant difference between govt students(8.70) and private students (9.01) speed component the't' values were (1.08) not significant. The scores of agility test of (12.32) govt are higher than and private high school students (14.93). the 't' values were (7.88) significant at 0.01 level. The endurance scores of govt students are higher (2114.2)than private high school students (2012.2). the 't' values were (1.38) not significant. The flexibility of govt students (11.68)are higher than private high school students (10.69). the 't' values were (2.96) significant at 0.01 level of significance.

CONCLUSION:

On the basis of the results, the following conclusion drawn.

- Strength scores govt students are higher than private high school students. The 't' values were not significant at 0.01 level of significance.
- There is a significant difference between govt students and private high school students in speed component the 't' values were not significant at 0.01 level of significance
- The scores of agility test of govt students are higher than private high school students. The 't' values were significant at 0.01 level of significance
- The endurance scores of govt students are higher than private high school students. The 't' values were significant at 0.01 level of significance
- The flexibility scores of govt students are higher than private high school students. The 't' values were significant at 0.01 level of significance.
- Overall physical fitness performance of govt school was higher than the private high school students of yadgir taluka.

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A Study of Adjustment and Physical Fitness among Male and Female Players

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Introduction:

Adjustment generally refers to the modification to compensate for to meet special conditions. In the dictionary the term adjustment means to fit, make suitable, adapt, arrange, modify, harmonize or make correspondence. Whenever we make an adjustment between two things adapt or modify one of both or both to correspond to each other. For example wearing of clothes according to the requirement of the seasons is an example of adjustment. We modify ourself according to seasons because we cannot modify the seasons. Before understanding the adjustment as a process it is necessary to examine some of the definitions of adjustment given by the researchers.

Adjustment is the process by which a living organism maintains a balance between its needs and the circumstances that influence the satisfaction of these needs (Shaffer, 1961).

From these definitions it is clear that in every definition the needs are incorporated. One has to change one's mode of behavior to suit the changed situation so that a satisfactory and harmonious relationship can be maintained keeping in view the individual and his needs on the one hand and environment and its influence on the individual on the other hand. Even Shaffer's definition underlines one's need and their satisfaction. Shaffer tries to maintain a balance between his needs and his capacities of releasing these needs and as long as this balance is maintained he remains adjusted. As soon as this balance is disturbed he drifts towards maladjustment. Gates and Jersild (1948) mentioned that adjustment is a harmonious relationship between and individual and his environment. In view of all these facts it could be stated that adjustment is a condition or state in which the individual behavior conforms to the demands of the culture or society to which he belongs and he feels that his own needs have been or will be fulfilled. In this concern Arkoff (1968) had given an extensive definition of adjustment. According to Arkoff adjustment is the interaction between a person and his environment. How one adjusts in a particular situation depends upon one's characteristics as also the circumstances of the situation. In other words, both personal and environmental factors work side by side in adjustment. An individual is adjusted if he is adjusted to himself and to his environment.

Researchers have made several attempts to measure the relationship between adjustment and other factors. For example the relationship between adequacy and social adjustment and adequacy of personal adjustment, has been investigated in a large number of studies. In Moreno's study it was observed that how choice status or high rejection status is evidence that the adjustment of the subject is not good. A large number of studies search the relationship between the socio metric status of the individuals and adjustment. In these studies it was observed that the subjects low in social status make more unfavorable responses than the subjects high in social status (Baron, 1951).

Methods of Adjustment

In order to lead a healthy happy and satisfying life one has to learn the various ways of adjustment. The first one being coping with ones environment as effectively as possible. The individual has to safeguard his self against turning into a mal adjusted and abnormal personality. Psychologist have suggested different ways or methods which could be grouped into two categories, the former is called as direct method latter is called as indirect methods. In the direct methods increasing trials or improving efforts is an important one. The second one refers to adopting compromising means. At times one has to withdraw and to be submissive and finally he has to make proper choice and decisions. There are indirect methods of achieving adjustment, infact indirect methods are those methods which a person tries to seek temporary adjustment to protect himself for the time being against a psychological danger. These are purely psyche or mental devices that is why they are called as defense or mental mechanisms. In these indirect methods all the defense mechanisms suggested Freud are incorporated.

Physical Fitness:

There are several personal variables that are closely associated with athletic or sports accomplishments. The very first thing is physical fitness. Physical education is necessary for physical fitness. "Physical education contains a great potential for learning, for the cultivation of reflective thinking, and for the intellectualization of our choices" (Shephard, Natalie, 1960). This principle is based on facts. For example, according to the Oberfeuffer and Ulrich (1962)

Objectives of Study

To find out the effect of physical fitness, gender and sportsmanship on adjustment.

Hypothesis:

The physically fit subjects have significantly better adjusted than physically poor fit subjects.

The female Ss have significantly better adjusted than male Ss.

The sportspersons have significantly better adjusted than non sportspersons.

Sample of the study:

Sample was selected from Aurangabad Dist. Total sample of the study, at the initial stage was 400, of which 200 were sportspersons selected from physical education colleges & 200 were non sportsperson selected from academic colleges. However, since a factorial design was used & self frequencies were kept equal, few Ss. were deleted. Finally the effective sample was that 320 Ss. only. The age range of the Ss was 19 to 22 years and the educational status of the Ss was B.A. , B.P.Ed. The male female ratio was 1:1.

Tools use for data collection

Adjustment Inventory:

This adjustment inventory developed by H. S. Asthana. It consisted of 42 items. Each item is associated with two alternatives "Yes" and "No". The scale gives you an index of adjustment. The reliability coefficient is 0.82 and validity is 0.76.

Physical fitness Tests:

Nine different tests were administered on Ss. Fleishman (1964) suggested ten different tests to measure physical fitness of the sport persons. Of these ten tests only nine tests were used. Soft - Ball Throw Test was not administered.

Procedure of Data Collection:

The data were collected by administering the scales on a small group of Ss at a time. Every time 15 to 20 Ss were invited. Their seating arrangement was made in a classroom. When the Ss took their seats and sat conformably, through informal talk rapport was formed. They were told about the importance of the study.

Variables under study:

Physical fitness, Gender, Sport persons

Dependent variable

Adjustment:

Design of the study:

A balanced 2 x 2 x 2 factorial design was used for analyzing the data.

STATISTICAL INTERPRETATION OF RESULTS

Complete Summary of Three WAY ANOVA for Adjustment

From the summary it is seen that main effect A is highly significant. Main effect A refers to the factor of physical fitness. It was varied at two levels i.e. physically fit and physically poor fit. It was assumed that physically fit Ss. and physically poor fit Ss. differ significantly with regards to adjustment. Since, the main effect A is highly significant ($F = 70.62$, $df = 1$ and 312 , $P < 0.01$) it is clear that the physically fit Ss. and physically poor fit Ss. differ significantly from each other. Mean scores it was found that the physically fit Ss. had significantly better adjustment than the physically poor fit Ss. These results are in line with the hypothesis of the study.

Area of Variance	SS	Df	MSS	F
A	819.20	1	819.20	70.62**
B	4992.80	1	4992.80	430.41**
C	819.20	1	819.20	70.62**
A X B	0145.80	1	145.00	12.56**
A X C	5.00	1	5.00	0.43
B X C	24.20	1	24.20	2.08
A X B X C	20.00	1	20.00	1.72
Within	3620.00	312	11.60	
Total				

The second independent variable was the factor of gender. It was regarded as an important factor in the development of adjustment. It was assumed that the male Ss develop significantly better adjustment than the female Ss. To what extent the hypothesis was supported by the result was examined from the summary of ANOVA. Main effect B represents the factor of gender; it was also varied at two levels. From the summary it is seen that main effect B is associated with a very high F value. It seems that in influencing the development of adjustment the role of gender was most significant. An F value of 430.41, yielded by main effect B, is highly significant beyond 0.01 level when the df are 1 and 312. Mean scores it was found that the male had significantly better adjustment than the female. These results are in line with the hypothesis of the study. The third independent variable was the factor of sportsperson it was also varied at two levels. The effective sample was divided into two groups, sportsperson and non-sportsperson. Main effect C represents the factor of sportsperson. Main effect C has yielded highly significant results. An F value of 70.62, for 1 and 312 df is significant beyond 0.01 level. It indicates that the sportsperson Ss and non sportsperson Ss differ from each other significantly. means are considered then it is seen that the mean score of the Sportsperson is larger than that of the non Sportsperson. These results also support the hypothesis of the study. Though all the three main effects were highly significant the results showed that, in influencing the development of adjustment, the factor fitness and the factor gender were functioning interdependently. This could be seen from the interaction effect. Interaction A x B has brought out an F value of 12.56, which is much large than what is needed to be significant at 0.01 level when the df are 1 and 312. In other words main effect A and main effect B are interdependent on each other. Interaction A x C is non-significant ($F = 0.43$ $df = 1$ and 312 , $P > 0.01$). it means main effects A and C are independent on each other. Interaction B x C and interaction A x B x C is also non-significant.

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Physical, Physiological And Psychological Fitness Among Middle Aged Men

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ABSTRACT

The aim of the present study was to examine the relationship between the perceived work ability and health-related quality of life and to investigate their associations with psychological fitness, physiological fitness and physical fitness in middle-aged men. The subjects in the studies were middle-aged men working in armed reserve police Vijayawada. The methods included questionnaires and physical activity. Different test modes were compared in order to assess the association of fitness test results with the perceived work ability. In the study the physical fitness was assessed by a 50m sprint race test, the Walk test and muscular performance tests (sit-ups, push-ups and pull-ups). Despite this physiological tests (systolic and diastolic blood pressure) and psychological tests (Rainer Marten's Sports Competition Anxiety Test Questionnaire, Smith's Aggression Test Questionnaire and Everly & Girdandos Psychological Stress test questionnaire) were conducted. These studies indicate that perceived work ability and Psychological fitness are significantly and positively associated with each other and that physical and physiological fitness may be contributing factors for both work ability and quality of life.

Key words: Physical, physiological and psychological fitness, study of working armed reserved police, middle aged men.

INTRODUCTION

Middle age is the period of age beyond young adulthood but before the onset of old age. Various attempts have been made to define this age which is around the third quarter of the average life span of human beings. The UK Census lists middle age as including both the age categories 35 to 44 and 45 to 50, while prominent social scientist, Erik Erikson, sees it ending a little later and defines middle adulthood as between 40 and 65.

Middle-aged adults often show visible signs of aging such as loss of skin elasticity and graying of the hair. Physical fitness usually wanes, with a 5–10 kg accumulation of body fat, reduction in aerobic performance and a decrease in maximal heart rate. Strength and flexibility also decrease throughout middle age. However, people age at different rates and there can be significant differences between individuals of the same age. There is a compelling need for clear and concise information on men's fitness and health. Yet most magazines and websites on the subject offer disjointed bits of information that fail to provide a clear path to men's health and fitness. They often make extravagant claims based on fad, hype, mythology, or commercial considerations in order to entice readership and sell products and services. They typically tout the latest and greatest methods for quickly and easily building muscles, stripping off fat, enhancing fitness, reducing stress, getting rich, and, of course, seducing women and keeping them coming back. To convince you of their authenticity, photos of slim, muscular, sexy young men with 6-pack abs are featured prominently.

Most men don't have the time or inclination to wade through issue after issue of magazines devoted to men's fitness and health in order to come up with exercise and nutrition programs to get them fit and healthy. The truth is that such magazines do not want to provide men with

comprehensive programs. If they did, readers would have no reason to come back and buy subsequent issues or subscribe. Thus, small chunks of information are presented in each issue, with no comprehensive program provided. Credibility comes into question when claims are made that their newest killer workouts and nutrition and aerobic exercise programs for burning fat are the best yet.

The object is to provide clear, useful, scientifically-based information in plain English. Men vary greatly in their physical fitness levels and goals. A great workout program for a young, healthy, man seeking to improve his athletic performance is inappropriate, unrealistic, and even dangerous for a middle-aged, sedentary man seeking to improve his health and physical fitness within tight work and family schedules. Thus this site will focus on physical fitness tests and questionnaires to aid men in categorizing their own fitness levels. Then we will provide a variety of workout programs from which men can choose based on their age, physical condition, time constraints, goals, and available equipment.

Middle-aged adults often show visible signs of aging such as loss of skin elasticity and graying of the hair. Physical fitness usually wanes, with a 5-10 kg (10-20 lb) accumulation of body fat, reduction in aerobic performance and a decrease in maximal heart rate. Strength and flexibility also decrease throughout middle age. However, people age at different rates and there can be large differences between individuals of the same age. Exercise is one of the lifestyle modifications health experts recommend, not only to reduce excess belly flab but to help prevent or minimize a number of life threatening conditions including heart disease, osteoporosis, and diabetes. Interestingly, a recent study published in the online journal, The Lancet Neurology, indicates that middle aged people who are more physically active have a reduced risk of developing dementia and Alzheimer's disease as they age. For many, the fight against fat can be a never-ending struggle, but the best time to prevent middle-age weight gain and the onset of other adverse health conditions is now. All you have to do is increase your activity by adding a few minutes to your regular workout until you reach an extra half hour of physical activity per week. For men and women, boosting activity during your middle years with activities such as walking, dancing, swimming, playing tennis, working out with exercise videos, and playing with your children will effectively increase overall health and wellness regardless of what kind of shape you were in to begin with.

There are several components of physical fitness including some that are not readily improved by training, such as coordination, reaction time, peripheral vision, and height. Since little or nothing can be done to improve these, our physical fitness definition below includes only physical capabilities that are amenable to training. These are strength, muscular endurance, aerobic endurance, speed, agility/quickness, flexibility and balance.

METHODOLOGY

In this chapter, the selection of subjects, selection of variables, selection of tests, reliability of instruments, reliability of the questionnaires, reliability of the data, tester's competency, orientation to the subjects, collection of the data, administration of the tests, the experimental design and statistical procedures have been presented.

Selection of Subjects: The topic of Research is "A Study of Physical, Physiological and Psychological fitness among middle aged men". Middle life means facing the downhill slope of life for the first time counting the years left rather than the years gone, it is a distinctive life stage. Men at this age define themselves in terms of their work. Hence an accurate and evidence based study of the relation between perceived work ability and health related quality of work is inevitable to understand the fitness parameters of the sample (Middle aged men).

A benefit to middle aged men is they show less aggressiveness and less concern for power and have more of present time orientation. Thus an epidemiological, physiological and psychological research to understand the type of physical activity needed to prevent disease and promote health is taken up. Physical fitness variables namely speed; cardio respiratory endurance and strength endurance will be measured by using 50 m run and bend knee sit-ups. Physiological variables such as systolic B.P and Diastolic B.P will be measured with the help of Sphygmomanometer psychological variables such as sports competition anxiety, aggression and stress will be measured by Rainer Marten's sports competition Anxiety test Questionnaire and eveny and Girdandos Psychological stress scale parameters.

Written voluntary consent was obtained after clearly explaining the nature of the study and the testing procedures of selected variables under which they would be tested and they were assured

that their data would not be used for any purpose other than the present study. They were also assured that the results would be kept strictly confidential. The collected data will be statistically analyzed using SPSS package and results will be presented.

The following information and charts show, how the physical test were conducted and compared with other subjects.

RUNNING TEST

Using the Running Test table below: See how your time for the 1.5-mile run compares to that of other men in your age-group. Just locate the row in your age-group table with your 1.5-mile run time and look across to the corresponding percentile ranking. For example, if you are 31 years old and run 1.5 miles in 13:22, the row in the 30-39 age-group table corresponds to a percentile ranking of 45. That means running Test performance was faster than 45% of the men in your reference age-group who took the test.

The table row with your run time also shows the VO2max that typically corresponds to your Running Test performance. VO2max is the gold standard of aerobic fitness. It refers to the maximal rate at which the body can process oxygen to produce energy and reflects the physiological capability of body systems, especially the heart, blood, blood vessels, and muscles.

Consideration of body size: For physiological reasons, it is easier for a smaller man to run faster and have a higher VO2max relative to body weight than a larger man. Thus, if you're a large man, your percentile ranking on the Running Test relative to men your own size should actually be somewhat higher than your percentile relative to the overall male population indicated by the table. Also, compactly-built people are at somewhat of a disadvantage in distance running, so their scores may somewhat underestimate their true fitness level.

Table 1: Percentile table of 1.5-Mile Running Test and VO2max

Percentile	1.5-Mile Time (min:sec)						VO2max (ml/kg/min)					
	30-39 Men	Year-Old	40-49 Men	Year-Old	50-59 Men	Year-Old	30-39 Men	Year-Old	40-49 Men	Year-Old	50-59 Men	Year-Old
99	7:11		7:42		8:44		58.9		55.4		52.5	
95	8:44		9:30		10:40		52.5		50.4		47.1	
90	9:30		10:16		11:18		50.4		48.2		45.3	
85	10:16		11:18		12:20		48.2		45.3		42.4	
80	10:47		11:44		12:51		46.8		44.1		41	
75	11:18		11:49		13:22		45.3		43.9		39.5	
70	11:34		12:34		13:45		44.6		41.8		38.5	
65	11:49		12:51		14:03		43.9		41		37.6	
60	12:20		13:14		14:24		42.4		39.9		36.7	
55	12:38		13:22		14:40		41.6		39.5		36.1	
50	12:51		13:53		14:55		41		38.1		35.2	
45	13:22		14:08		15:08		39.5		37.4		34.1	
40	13:36		14:29		15:26		38.9		36.7		33.8	
35	13:53		14:47		15:53		38.1		35.6		32.5	
30	14:08		14:56		15:57		37.4		35.1		32.3	
25	14:24		15:26		16:23		36.7		33.8		31.1	
20	14:52		15:41		16:43		35.4		33		30.2	
15	15:20		15:57		16:58		34		32.3		29.4	
10	15:52		16:28		17:29		32.5		30.9		28	
5	16:27		17:23		18:31		30.9		28.37		25.1	
1	18:00		18:51		19:36		26.5		24.2		22.1	

SIT UP TEST

Using the Situp Test table below: The number of sit-ups you can do compares to that of other men in your age-group, just locate the row in your age-group column corresponding to the number of situps you do and look across to the corresponding percentile ranking. For example, if you are 28 years old and do 44 situps, the row in the 20-29 age-group columns corresponds to a percentile ranking of 65. That means you did more situps than 65% of the men in your reference age-group.

Suggestions: Situp test score is the number of situps you can do in one minute. The test should be done on a clean, level surface. To begin, lie on your back with your hands clasped behind your neck and your knees bent at about 90 degrees. Have someone hold your feet down and time the event. Raise your torso until your shoulders are right above your hips. Each time you lower your torso, make contact between your shoulder blades and the floor. It is essential to keep your hands lightly on your neck but to NEVER PUT PRESSURE ON YOUR NECK. You may pause to rest but that will reduce your score.

Table 2: Age-Groups Percentiles for Situps
Percentile Rank by Age-Group and Number of situps

Percentile	Age Group – Men			
	20-29	30-39	40-49	50-59
95	55	51	47	43
90	52	48	43	39
85	49	45	40	36
80	47	43	39	35
75	46	42	37	33
70	45	41	36	31
65	44	40	35	30
60	42	39	34	28
55	41	37	32	27
50	40	36	31	26
45	39	36	30	25
40	38	35	29	24
35	37	33	28	22
30	35	32	27	21
25	35	31	26	20
20	33	30	24	19
15	32	28	22	17
10	30	26	20	15
5	27	23	17	12

Reliability of the Instruments: All the instruments and equipment used for the study were standard ones and of high quality. None had any functional defect and were being used for the same purposes. Each instrument was tested several times and was used on subjects only being satisfied with the performance of the instrument. Stop watches and floor mats used for measuring speed and strength endurance were acquired from reputed companies. Sphygmomanometer and stethoscope used for measuring blood pressure were acquired from a

physician who has been using it for diagnostic purposes on his patients for quite some time. A qualified person was assisted to take blood pressure.

RELIABILITY OF THE QUESTIONNAIRES

Competition Anxiety: The reliability of the questionnaire was established through test and re-test method by Rainer Marten's, reliability co-efficient ranged from 0.55 to 0.93.

Aggression: The reliability of the questionnaire was established through test and re-test method by Smith reliability co-efficient ranged from 0.61 to 0.83.

Stress: The reliability of the questionnaire was established through test and re-test method by Everly and Girdandos reliability co-efficient ranged from 0.51 to 0.91.

Reliability of the Data: Reliability of the data was established by test and re-test process where consistency of scores was statistically tested by computing intra class co efficient of correlation for ten subjects on the entire selected criterion variables. All the variables revealed high correlation when tested and re-tested, thus ensuring their reliability.

Blood Pressure: Blood pressure was measured by indirect method using sphygmomanometer and stethoscope.

For measuring blood pressure, the subjects were asked to report early in the morning and were allowed to relax for half an hour by lying down on the mattress. After ensuring that the subjects were relaxed mentally and physically, they were asked to sit in a chair and the cuff of the sphygmomanometer was placed on the right upper arm of the subject. The stethoscope was placed over the brachial artery downstream from the cuff. The pressure cuff on the upper arm was inflated by pressing the rubber bulb and the cuff was inflated till no sounds were heard in the stethoscope, as the brachial artery has been collapsed by the pressure off the cuff. The pressure in the cuff was then gradually reduced by deflating the cuff through the valve. As the cuff started deflating gradually small sound called "korotkoff" sounds were heard through the stethoscope, at this stage the mercury level in the manometer was recorded and this recording was taken as systolic blood pressure. The pressure off the cuff that was indicating on the manometer when the first "korotkoff" sound was heard and recorded as the systolic blood pressure.

CONCLUSION

A regular physical, physiological and psychological fitness program can reward you with many benefits. It will very likely decrease your risk of contracting various diseases, raise your sense of well-being and confidence, and improve your ability to engage in recreational sports and outdoor activities. Ideally, physical, physiological and psychological fitness program will improve your aerobic endurance, muscular strength, muscular endurance, speed, agility, flexibility and balance. It will also improve your body composition, building muscle and reducing body fat. However, the most well-intentioned and well-designed program is only as good as your ability to stick to it. Therefore, someone who has been relatively sedentary and is just beginning a program should not try to take on too much because the body and mind need time to adjust to the demands of exercise.

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Effect Of Selected Yogasanas On Psychological Traits Of High School Girls

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ABSTRACT

This study was designed to deal with the effect of selected yogasanas on psychological variables such as anxiety aggression and self-concept. To execute this investigation, eighty girls of twelve to fourteen years of age were selected as subjects under random group design from Z.P.High School, Santhagudipadu in Guntur District, A.P.They were divided into group as experimental and control, To assess the level of anxiety the standardized Rainer martens sport competition anxiety test (SCAT) was used, To assess the level of aggression, smith's questionnaire for sporting aggression was used, To asses the level of self-concept, Mukta Ranlrastogi's questionnaire which consists of fifty-one statements was used. Seven yogasanas were given to the experimental group for a period of six weeks. Asanas repeated for the prescribed time. There was no training for the control group. After six weeks of training of yogasanas, again the anxiety, aggression and self- concept were assessed. To find out the effect of yogasanas, t-ratio was employed.

Keywords: Yogasanas on Psychological variables anxiety, aggression, self-concept, Experimental, Control groups.

I. INTRODUCTION

Yoga is India's unique contribution to physical education activities. Yoga is a scientific and systematic discipline of the internal human body with view to cosmic reality of god. It is the ancient traditional Psycho –Physical culture that creates to the health of a human being. "Better to hunt in field for health unsought, Than fee the doctor for a nauseous draught the wise for cure an exercise... Depend, God never made his work for man to mind fudi"-Johnson Dryson Yoga is a system of attaining perfect physical and mental health. The body is the temple of soul and to reach harmony of mind, body and spirit the body must be physically fit. Yoga controls one's senses resulting in an integrated personality. Positive changes in the life style of the people can be brought through yoga during the middle and old age group. Behaviours can also be moulded properly leading to balanced personalities. It clearly reveals that there will be a sound mind only in a sound body. To keep our body in a good condition it is essential that the various organs and systems of our body must be in a good condition. Yogic exercises play an important role in the maintenance of the above systems. The practice of yoga not only develops the body but also produces the mental faculties, more over, the yoga acquires mastery over the involuntary muscles of his organism.

II. METHODOLGY

This study was designed to deal with the effect of selected yogasanas on psychological variables. To fulfill the aim of achieving the purpose of the study, the subjects were taken from Z.P. High School, Santhagudipadu in Guntur District, A.P.

To execute this investigation, eighty girls of twelve to fourteen years of age were selected as subjects under random group design from Z.P. High School, Santhagudipadu in Guntur District. They were divided in to two groups. The groups were designated as 'A' and 'B'. 'A' as named of experimental group, 'B' as a named of control group. The control group was not subjected to any treatment during the experimental period. The method of doing each yogasanas was explained to them before training. The researcher him self demonstrated each item of the

asanas. The standard sports competition anxiety test (SCAT) was used to measure the anxiety for girls. The test consists of fifteen statements. Standardised Smith's questionnaire for sporting aggression was used to score the aggression in girls. The test consists of four questions with levels of responses statements. Mukta Rani Rastogli's questionnaire which consists of fifty one statements was used to measure self concept. It is a likert method and each statement consists of three, five, and five responses. The respondents made tick mark (✓) on any one of the responses that fitted to them.

III. RESULTS

Table 1.1

T-Ratio For Anxiety Of Control Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	19.68	2.88	.46			
				.52	.79	.66
Final	20.2	4.08	.65			

The table value of 't' at 0.05 levels of significance is 2.02

Table 1.1 reveals the calculated value of 't' for the control group is .66. Since the obtained value of 't' ratio was lesser than the table 't' value, there is no significant difference between the initial and final tests of the control group.

Table 1.2

T-Ratio For Anxiety Of Experimental Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	19.5	2.35	.37			
				4.05	.7	5.79
Final	15.45	3..72	.50			

The table value of 't' at 0.05 levels of significance is 2.02

Table 1.2 reveals the calculated value of 't' for the experimental group is 5.79. which exceeds the table value to imply that there is very high difference between the initial and final tests of the group pertaining to yogasanas in anxiety of girls aged twelve to fourteen years. Hence the hypothesis was accepted at 0.05 levels of significance.

Table 2.1

T-Ratio For Aggression Of Control Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	13.05	1.79	.28			
				.02	.036	.56
Final	13.25	1.37	.22			

The table value of 't' at 0.05 levels of significance is 2.02

Table 2.1 reveals the calculated value of 't' for the control group is .56. Since the obtained value of 't' ratio was lesser than the table 't' value, there is no significant difference between the initial and final tests of the control group.

Table 2.2

T-Ratio For Aggression Of Experimental Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	12.35	2.10	.33			
				.02	.36	5.79
Final	9.95	2.39	.38			

The table value of 't' at 0.05 levels of significance is 2.02

Table 2.2 reveals the calculated value of 't' for the experimental group is 5.79. which exceeds the table value to imply that there is very high difference between the initial and final tests of the group pertaining to yogasanas in aggression of girls aged twelve to fourteen years. Hence the hypothesis was accepted at 0.05 levels of significance.

Table 3.1

T-Ratio For Self Concept Of Control Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	158.58	26.38	4.17			
				.13	5.72	.02
Final	158.45	24.79	3.91			

The table value of 't' at 0.05 levels of significance is 2.02

Table 3.1 reveals the calculated value of 't' for the control group is .02. Since the obtained value of 't' ratio was lesser than the table 't' value, there is no significant difference between the initial and final tests of the control group.

Table 3.2

T-Ratio For Self Concept Of Experimental Group

Test	Mean (M)	SD (6)	SEM (6M)	DF (DM)	STDBM (6DM)	T-Ratio
Initial	155.35	11.50	1.82			
				6.73	2.49	2.70
Final	162.08	10.16	1.61			

The table value of 't' at 0.05 levels of significance is 2.02

Table 3.2 reveals the calculated value of 't' for the experimental group is 2.70. which exceeds the table value to imply that there is difference between the initial and final tests of the group pertaining to yogasanas in self-concept of girls aged thirteen to fourteen years. Hence the hypothesis was accepted at 0.05 levels of significance.

IV. DISCUSSION

Anxiety: The above results indicated that the experimental group had significantly improved on the self concept by yogasanas when compared with the mean gains with the control group. The effect of yogasanas might be the reason for the improvement in the experimental group after the training period. The present study substantiate that the effect of yogasanas on self concept of twelve to fourteen years old school girls had definite effect on the reduction of the anxiety in the experimental group. **Aggression:** The above results indicated that the experimental had significantly reduced aggression by yogasanas when compared with the mean gains of the control group. The effect of yogasanas might be the reason for the reduction of aggression in the experimental group after the training period. **Self Concept:** The above results indicated that the experimental had significantly improved on the self concept by yogasanas when compared with the mean gains of the control group. The effect of yogasanas might be the reason for the improvement of self concept in the experimental group after the training period.

V. CONCLUSIONS

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

Practice of yogasanas the anxiety level among high school girls. The study also indicated that six weeks of asanas training was sufficient to decrease the anxiety level.

Aggression level decreased significantly by the practice of yogasanas among high school girls. The results also indicated that six weeks practice of asanas significantly decreased aggressions level.

Practice of yogasanas increased self-concept level significantly among high school girls. It also indicated that there was much increase in the level of self- concept through six weeks practice of yogasanas.

VI. RECOMMENDATIONS

It was recommended that yogasanas shall be made as compulsory part in the physical education programme in school and colleges.

It was recommended that similar studies shall be conducted on male students of different age groups.

Comparative studies on the effects of yogasanas and training schedules on the variables used in the studies shall on the variables used in the studies shall be conducted.

Studies to see the effect of yogasanas on psycho physiological and Psycho-motor variables shall also be conducted.

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Self Perception Through Yoga

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INTRODUCTION :

Self perception refers to one's perception of himself/herself. Self perception is the way a person explains the behaviour based on self observation. Self perception is the understanding and knowledge we have of our own existence and how we see ourselves in relation to others and to our surroundings. In order to possess a positive or healthy self-concept we must know ourselves, love our self and be true to ourselves. Today we live in an increasingly complex and multifaceted world. In order to meet the challenges we now face, it is more important than ever to build a solid personal foundation, a foundation consisting of self knowledge, self love and self confidence. Factors included in self perception are social competence, scholastic competence, social acceptance, athletic competence, physical appearance and behavioural conduct. Positive self perception will help an individual and also the society to grow in right direction. Yoga will go a long way in improving the self perception.

Statement of the Problem :

The purpose of this study was to find out the effect of selected yogasanas on self perception.

Hypothesis :

It was hypothesized that yoga training will have positive effect on self perception.

REVIEW OF RELATED LITERATURE

Looking at published literature is main to the research process of any academic discipline - the more knowledge about a subject, the more insightful and better the work will be. A well conducted literature review is important for any research report.

Urs and Ashok (2011) conducted a study to compare the various dimensions of self perception of children who are actively participating in games and sports with the children who do not engage in any sport event. 120 children (60 sports children and 60 who were not participating in any sports) from the schools of Bangalore city were compared. They concluded that (1) students engaging in sports have a favourable self perception than non-sports children. (2) There was no difference between the two groups on the scholastic self and global self.

Crowley (2002) studied on "The Psychological and Physiological Effects of Yoga on Children". The aim of the current study was to assess the psychological and physiological impact of a brief yoga program for children using a randomized placebo-control design. Twenty-two schoolgirls aged 8-10 were recruited to take part in a 6-session after-school program. Participants were randomly allocated to either yoga classes or recreation classes. For mental wellbeing, pre and post-session mood and pre and post-program self-esteem and physical self-worth variables were assessed. Later, a replication study was conducted where yoga was offered to the former

recreation group. Contrary to expectations, no significant changes were found on the physiological indicators of relaxation. Global self-esteem and physical self-worth variables also remained constant in both the yoga and recreation groups. As hypothesised, significant reductions in anxious mood were consistently reported from the second session onwards following yoga classes. Contrary to expectations however, depressed mood remained unchanged in either group. Results of the follow-up study confirmed most of the findings of the main study, except for a small improvement on the physical self-worth variable of self-perceived sports competency, and no significant post-session mood changes. It was concluded that while brief yoga programs might have little impact on children's overall self-esteem or physical self-perceptions, especially where children are physically active and already enjoy moderate to high levels of self-esteem, yoga classes may contribute to reductions in immediate anxiety levels.

Methodology :

To achieve the purpose 60 high school students were randomly selected from Jawahar Navodaya Vidyalaya, Doddaballapur, Bangalore Rural District. The students were divided into two groups of Thirty in each group. One group was utilized as the control group and the other as experimental group. Experimental Group was given yoga training for Twelve weeks. To find out the self perception Susan Harter's Self Perception Profile was used. The data were analyzed statistically by computing mean, standard deviation and 't' test. The hypotheses were tested at 0.05 and 0.01 levels of confidence.

ANALYSIS OF THE DATA :

Table-1

Significance of differences between pre and post tests scores of subjects on Self Perception among experimental and control groups.

Group	Test	Mean	Standard Deviation	't' value	Level of Significance
Experimental group	Pre Test	87.500	1.852	4.868	Significant at 0.01 level
	Post Test	90.300	2.548		
Control Group	Pre Test	69.666	4.543	1.586	Not Significant
	Post Test	71.400	3.900		

It is observed from the above table that in experimental group the Self Perception mean scores of pre test is 87.500, which has increased to 90.300 in post test, whereas among the control group the pre and post test mean scores of Self Perception are 69.666 and 71.400 respectively.

It is also evident from the above table that the obtained 't' value 1.586 is less than Table value 2.05 even at 0.05 level of significance in control group and 4.868 is greater than Table value 2.76 at 0.01 level of significance in experimental group.

CONCLUSION :

On the basis of findings and within the limitations of the study following conclusions were drawn :

1. Significant improvement was seen in the Self Perception of Experimental group.
2. Control group did not show significant improvement in self perception.

RECOMMENDATIONS :

With the help of the results following recommendations were made :

1. Yoga should be made a mass movement and introduced in all the fields including the corporate sectors for human resource development thereby improving the economy of our country.
2. It is recommended that Regular Yoga and Meditation classes should be conducted to all the students at University level for the allround development of their personality.

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Effect Of Plyometric Training, Circuit Training And Combined Training On Selected Muscular Strength And Muscular Power Among The Secondary Students.

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INTRODUCTION: - Competition plays a vital role in today's modern era where records are being rewritten and are being excelled mostly in every successive competition. To achieve better performance at higher level competitions one should undergo continuous and systematic plan of training right from child hood. Muscular Strength and Muscular Power are pre requisite fitness components required to participate in physical education and sports and games activities and more particularly they play a pivotal role in short as well as in longer durational physical activities. Muscular Strength & Muscular Power is the ability of the circulatory system to keep the muscles supplied with Oxygen and Nutrients and to keep the muscles free of waste products during short as well as long duration physical activity. Various training methods are designed to enhance the above fitness components such as Circuit Training, Interval Training and Plyometric Training etc.

PLYOMETRIC TRAINING: Plyometrics is a type of fast exercises in which the muscles are not allowed to fully contract after being extended, typically involving Jumping and Bouncing'. (Double Tongued Dictionary)

CIRCUIT TRAINING: Circuit training is a type of interval training in which strength exercises are combined with endurance/aerobic exercises, combining the benefit of both a cardiovascular and strength training workouts. 'CIRCUIT' means a group of activities and refers to a number of selected 'stations' positioned around the facility that are to be visited in rapid succession. The range of stations includes and depends upon to the needs of the components to be developed (e.g. hydraulic equipment or free weights as well as allocated spaces to do squat thrusts, pushups, jumping jacks, sit ups and other exercises). Each person should complete the activity in one station before they proceed to the next station.

STATEMENT OF THE PROBLEM: The purpose of the study was to compare the Effect of Plyometric Training, Circuit Training and Combined Training on Muscular Strength and Muscular Power among the secondary students.

METHODOLOGY: Research Scholar used four different Training groups to know the effect of training on Muscular Strength and Muscular Power. Secondary School Boys of Ekashila High School, Hasanparthy, Warangal in the age group of 14-15 years, those who have not participated intensively in games and sports or any special coaching programme were selected to conduct the said study. However they were allowed to attend the regular physical education classes in school. Forty students were selected randomly by lot from the total population of 300 subjects after eliminating physical handicapped and weak students. Then they were divided into four equal groups randomly consisting of 10 subjects in each group. The groups were named randomly by lot as Plyometric Training group, Circuit Training group, Combined training group and Control group and their performances were measured before the commencement of the training and after completion of 12-weeks of Training. Plyometric Training was designed with eight exercises (four for Upper body and four for lower body) and the Circuit Training was also designed with eight exercises. The Combined Training group subjects were asked to join with the Plyometric Training group on Tuesday, Thursday, Saturday and with Circuit Training group on Monday, Wednesday and Friday. The following component and test items were used.

- 1) Push-Ups to measure Muscular Strength
- 2) Standing Broad Jump to measure Muscular Power

The Control group did not participate in any Training programme except their routine activities. The 't' test and Anacova were used to find out the Pre and Post Training effect and to compare Training effect among the groups respectively.

RESULTS AND DISCUSSION

The applying the above mentioned statistical techniques the following results are obtained.

Table:1.1 Results of consolidated 't' test of Push-Ups

Test Items	Obtained "t" value				Required "t" value at 0.01 level
	Plyometric Training group	Circuit Training group	Combined Training group	Control group	
Push-Ups	23.64*	15.46*	15.96*	0.43	3.2

*significant at 0.01 level

From the above table it is observed that the performance of the Training groups improved significantly with respect to Push-ups.

Table:1.2 Analysis of covariance of Push-Ups

Source of variation	d.f	SSx	SSy	SSxy	SSyx	MSSyx
Treatment group Mean	N-1 4-1=3	9	390.08	-4.85	397.98	132.66
Error	N-K-1 40-4-1=35	89	104.7	71.2	47.84	1.37
Total	38	89.9	494.78	66.35	445.82	

*significant at 0.01 level, $F_{yx}=96.83$ $F_{01}=4.35(3,35)$

Since obtained values varies and are also greater than the Table value F_{01} it is concluded that all the Training methods are not equally effective, in improving the performance of Muscular Strength. In order to find out which Training method is more effective, pair wise comparison analysis on adjusted means of post test data was carried out.

Table:1.3 Scheffe's Post hoc Test for Push-Ups (Comparison of Adjusted Post Test Mean)

Control Group	Plyometric Training Group	Circuit Training Group	Combined Training Group	Mean Difference	Confidence Interval 0.01 Level
18.3	26.3			8	2.31
18.3		25.18		9.88*	
18.3			25.8	10.5*	
	26.3	25.18		1.12	
	26.3		25.8	0.5	
		25.18	25.8	0.62	

Table :1.3 shows that the Training methods ie. Plyometric Training group and Combined Training group are equally effective , Combined Training and Circuit Training are equally effective and also Plyometric Training and Circuit Training are equally effective. It is therefore concluded that if a choice has to make out of three treatments i.e., Plyometric Training, Circuit training and Combined training treatment, Plyometric Training group should be preferred. In other words Plyometric Training programme may be recommended for improving the performance.

Table:2.1 Results of consolidated 't' test Standing Broad Jump

Test Items	Obtained "t" value				Required "t" value at 0.01 level
	<u>Plyometric Training group</u>	<u>Circuit Training group</u>	<u>Combined Training group</u>	<u>Control group</u>	
Standing Broad Jump	11*	7.67*	11*	0.33	3.2

*significant at 0.01 level

From Table1 it is observed that the performance of the Training groups improved significantly with respect to Standing Broad Jump.

Table:2.2 Analysis of Covariance of Standing Broad Jump

Source of variation	d.f	SSx	SSy	SSxy	SSyx	MSSyx
Treatment group Mean	N-1 4-1=3	0.11	0.49	0.14	0.33	0.11
Error	N-K-1 40-4-1=35	1.59	2.17	1.73	0.34	0.009
Total	38	1.70	2.66	1.87	0.67	

*significant at 0.01 level, $F_{yx}=12.22$ $F_{.01}=4.35(3,35)$

Since obtained values varies and are also greater than the Table value F.01 it is concluded that all the Training methods are not equally effective, in improving the performance of Muscular Power. In order to find out which Training method is more effective, pair wise comparison analysis on adjusted means of ost test data was carried out.

Table :2.3 Scheffe's Post hoc Test of Standing Broad jump (Comparison of Adjusted Post Test Mean)

Control Group	Plyometric Training Group	Circuit Training Group	Combined Training Group	Mean Difference	Confidence Interval 0.01 Level
1.78	1.97			0.19*	0.18
1..78		2		0.22*	
1.78			2	0.22*	
	1.97	2		0.03	
	1.97		2	0.03	
		2	2	0	

Table 2.3 shows that the Training methods Combined Training group and Circuit Training group are equally effective , Circuit Training and plyometric Training are equally effective and also Combined Training and Plyometric Training group are equally effective. It is therefore concluded that if a choice has to make out of three treatments i.e., Combined Training, Circuit training and Plyometric training treatment, Circuit and Combined trainings should be preferred. In other words Circuit and Combined trainings programmes may be recommended for improving the performance.

Conclusions:

After the interpretation of the data the following conclusions were drawn.

1. All the Three Training Groups plyometric training group, circuit training group and combined training group have shown significant improvement due to 12 weeks of training on Muscular Power and Muscular Strength.
- 2 On comparing the training effect there was no significant difference among the three training groups. i.e plyometric training group, circuit training group and combined training group on Muscular Power and Muscular Strength.
- 3 The control group failed to produce significant improvement on Muscular Power and Muscular Strength.

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Analysis Of Emotional Maturity Of Handball Players At Different Standards

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Abstract: The purpose of the study was to analyse the emotional maturity of handball players at different standards. The investigator had selected one hundred and sixty seven male handball players as subjects ($n = 167$) from different standards such as College, District, University and State level, who part take in various tournaments like University, State, Inter University, Inter-State (South Zone) held during the year 2010-11. The players include twenty six from College level ($n = 26$), twenty nine from District level ($n = 29$), sixty from University level ($n = 60$) and fifty two from State level ($n = 52$). The tournaments of the above game were held at different venues in different times. Emotional maturity was selected as the psychological variable of this study. Analysis of variance (ANOVA) was used to analyse the collected data. The result of the study revealed that there is significant difference ($p \leq 0.05$) on emotional maturity among the four standards of handball players.

Keywords: Sports psychology, handball, emotional maturity

Introduction: Sport psychology, as the systematic scholarly study of human thought, emotion, and behaviour in sport contexts, consists of four main areas: personality and sport participation, motivational processes, interpersonal and group processes, and intervention techniques to enhance sport performance and personal development (Cote and Thomas, 2007). Emotional maturity, the ability to act on and react to life circumstances with intelligence, sound judgment and wisdom, affects sports performance quite significantly. According to Hanin (2000) emotional maturity is a process in which the personality is continuously striving for greater sense of emotional health, both intra-physically and intra-personally (Schutte *et al.*, 1998). It is the ability to experience, understand and express one's own deepest feelings in the most appropriate and constructive ways. An Emotionally matured individual is relatively free from the well known constellation of inferiority, egotism, and competitiveness (Lazarus, 2000 and Beattie *et al.*, 2005). It is this emotional maturity which contributes to the integration of all the aspects of man's personality and the fulfilment of his intellectual, emotional and social needs (Weinberg and Gould, 2001). A person can be called emotionally matured if he is able to display his emotions in appropriate degree with reasonable control. Almost all the emotions can be distinctly seen in him and the pattern of expression is easily recognized. He will express his emotions in a socially desirable way. Emotional maturity is a requirement for starting and maintaining relationships. It is a prerequisite for long term happiness. The characteristics for healthy relationships include co-operation, humor, quick conflict resolution, intimacy and caring, honoring, giving and receiving, equality, honesty, assertiveness, healthy boundaries, accommodation of change, community and extended family contact, space for privacy, balance between work and play, stabilizing and energizing qualities (Schutte *et al.*, 2007). On overall emotional maturity, the international players were evidently more emotionally stable than the State and National groups and this attribute helped them to remain calm and in control even in tough situations, thus making them significantly better than the players of other two levels. This might have been due to their long training, exposure and or higher age which perhaps contributed positively towards their overall emotional maturity levels (Salovey and Sluyter, 1990). In their study on Olympic athletes, Hagstved

and Hannin (2007) reported that such athletes experienced a high frequency of optimizing emotions.

Team handball is a complex intermittent game, which requires players to have well developed. Motor ability, sprinting, jumping, flexibility and throwing velocity represent physical activities that are considered as important aspects of the game and contribute to the high performance of the team. Successful performance requires explosive power of the legs and arms, sprint velocity and kinesthetic feeling in ball control. Performance of an athlete in a sport and games depends upon physical and motor fitness component. Muscles also depend upon the proper functioning of the brain, skeleton, joints and nervous system and that motor skills involve the proper functioning of such system

Materials and method:The aim of the study was to analyse the emotional maturity of handball players at different standards. The investigator had selected 167 male handball players as subjects from different levels such as College, District, University and State level, who part take in various tournaments like University, State, Inter University, Inter-State (South Zone) lack during the year 2010-11. The 167 Handball players include 26 from College level 29 from District level 60 from University level and 52 from State level. The tournaments of the above game were held at different venues in different times. The College level subjects were selected from St. Joseph's College of Physical Education, Moolamattom, Idukki, Kerala and Nirmala College, Moovattupuzha, Ernakulam, Kerala. The District level subjects were selected from Kottayam and Pathanamthitta districts in Kerala. The University level subjects were selected from Mahatma Gandhi University, Kottayam, Kerala, Calicut University, Tenjippalam, Malappuram, Kerala, Kannur University, Kannur, Kerala and Annamalai University, Annamalai Nagar, Tamil Nadu. The State Level subjects were selected from Kerala, Tamil Nadu, Karnataka and Goa. Emotional maturity was selected as psychological variable for this study. Dr. Yashvir & Dr. Mahesh emotional maturity questionnaire was used to measure the emotional maturity.

Data Analysis:Mean and standard deviation were calculated for emotional maturity for each group. Analysis of variance (ANOVA) was used to examine significance between the groups. Statistical significance was set to a priority at $p \leq 0.05$. All statistical tests were calculated using the statistical package for the social science (SPSS).

Results

The Mean and Standard Deviation on Emotional Maturity Rate of Handball Players at Different Standards

	N	Mean	Std. Deviation
Emotional maturity College	26	99.38	33.25
District	28	128.83	34.77
University	60	130.55	43.11
State	52	132.29	34.19
Total	166	125.94	39.02

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Emotional maturity	Between Groups	1947.59	3	7315.86	5.168	.002
	Within Groups	230747.8	162	1415.63		
	Total	252695.4	165			

The table denotes that the mean and standard deviation on Emotional Maturity Scale of college level, district level university level and state level men hand ball players are 99.38-33.2534, 128.83-34.773, 130.55-43.108&132.29-34.187 respectively. The obtained F ratio between groups was 5.168. Though the F ratio required value for significant was at 0.05 the received the result of the F ratio of Emotional Maturity Scale was 5.168. The result score reveals that there is significant difference between the four categories at 5%level of significance.

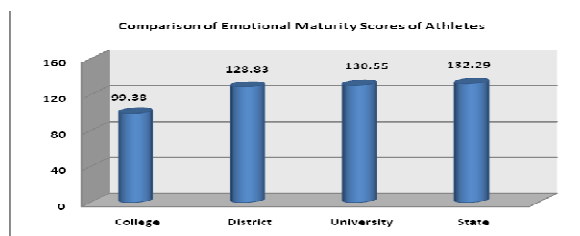
Multiple Comparisons

Scheffe's Post hoc test of Emotional Maturity Score

(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.
College	District	-25.597	9.818	.083
	University	-32.686*	8.535	.003
	State	-18.750	8.731	.207
District	College	25.597	9.818	.083
	University	-7.089	8.221	.863
	State	6.847	8.425	.882
University	College	32.686*	8.535	.003
	District	7.089	8.221	.863
	State	13.936	6.887	.255
State	College	18.750	8.731	.207
	District	-6.847	8.425	.882
	University	-13.936	6.887	.255

*. The mean difference is significant at the 0.05 level.

Comparing pair-wise we find that there is significant difference between college and other categories. The mean and standard deviation of college level, district level university level and state level men hand ball players on Emotional Maturity Scale is graphically presented in figure 1.



Discussion

Emotional maturity is the state in which one's emotional reactivity is considered appropriate and normal for an adult in a given society. It was a major factor especially as a predictor of success. Lane *et al.* (2009) observed that personality of emotionally matured and immatured adolescents differ significantly. Emotional maturity being the ability to act on and react to life circumstances with intelligence, sound judgment and wisdom, affects the sports performance quite significantly (Robazzha *et al.*, 2008 and Zizzi *et al.*, 2003). Nowadays youth are facing difficulties in life. These difficulties are giving rise to many psychosomatic problems such as anxiety, tensions, frustrations and emotional upsets in day-to-day life. According to Tenenbaum and Elran (2003) one's emotional maturity depicts ones capacity to manage and to check one's emotions, to evaluate others' emotional state and to persuade their judgment and actions. People who are emotionally matured are more able to put feelings into perspective before automatically verbalizing or acting them out. They also take responsibility for their every action, word and thought – and the resulting consequences. Austin *et al.* (2004) elaborate the characteristics of an emotionally matured person and explain that he has the capacity to withstand delay in satisfaction of needs. The criterion of emotional maturity includes the ability to deal constructively with reality; the capacity to adapt to change; a relative freedom from symptoms that are produced by tensions and anxieties (Baumister *et al.*, 2007 and Lane *et al.*, 2009). It includes the capacity to sublimate, to redirect one's instinctive hostile energy into creative and constructive outlets; it is a measure of one's capacity to create a positive mental attitude. Kirk *et al.* (2008) predict that emotional competence would be positively related to team attitudes and to both leader emergence and effectiveness.

Lane *et al.* (2003) and Petrides *et al.* (2007) reported that such athletes experienced a high frequency of optimizing emotions. Optimizing emotions were related to coping effectiveness, which emerged as a positive predictor of objective competitive results. Coping effectiveness also positively predicted subjective performance of the athletes. Similarly, adolescents with high emotional maturity have significantly higher stress coping abilities and self-confidence than those with lower emotional maturity (Lane *et al.*, 2009 and Van Rooy & Viswesvaran, 2004).

Conclusion: An Emotionally matured individual is relatively free from the well known constellation of inferiority, egotism, and competitiveness. Emotional maturity, the state players were evidently more emotionally stable than the university and district groups and this attribute helped them to remain calm and in control even in tough situations, thus making them significantly better than the players of other two levels. In this study the psychological variable such as emotional maturity was significant variation between different levels such as college level, district level, university level and state level of men handball players. It is concluded that state level players had better emotional maturity followed by the university level, district level and college level.

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Comparative Effect Of Forward Treadmill Running On Flexibility And Muscular Power

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ABSTRACT

The purpose of the study was to investigate the effect of Forward Treadmill Running on Flexibility and Muscular Power of Sports Related Persons. For this study, out of ninety students, twenty male subjects were selected randomly from Post Graduate Government Institute for Physical Education, Banipur, North 24 parganas, West Bengal India. The age of the subjects ranged between 21 to 27 years. Further the subjects were divided into two equal groups N=20, namely Group - A (Forward Treadmill running), and Group - C (Control group). The variables selected for the study was Flexibility and Muscular Power, Flexibility was measured by Front to rear split test and Side split test and Muscular Power was measured by Standing Broad jump. The pre-test data was collected prior to the administration of experimental training programme and after the completion of the training programme the post-test was conducted and the data was collected in the evening respectively at the laboratory of college premises. A Ten weeks training schedule was prepared by the researcher with the help of supervisor and other coaching professionals to investigate the effect of Forward Treadmill running. In order to investigate the existence of significant difference between Forward Treadmill running group and Control group on Flexibility and Muscular Power of sports related persons, the analysis of Co-variance statistic was used and the level of significance was set at 0.05 level ($p < 0.05$). To say specifically, Flexibility was improved but not significantly with the effect of Forward Treadmill Running. Further the Muscular power was found significantly improved due to the effect of Forward Treadmill Running.

Key Words: Treadmill, Flexibility, Muscular power

Introduction

Running is perhaps the most natural exercise a human can do, it is also the best cardiovascular exercise there is, Considered one of the most complete and healthy activities there are, it makes the whole body work and the heart beats to accelerate. One of the most popular types of home running exercise equipment is the treadmill, which provides a straightforward, efficient aerobic workout; the treadmill can be used for jogging and/or for interval training (www.ask.com/question/about). In general, one can get a similar workout on a treadmill as running outside as long as one maintains the same effort level. One can usually judge this based upon his heart rate or rating of perceived exertion. If, however, one runs the same pace on the treadmill as outside on flat pavement, he will expend less energy on the treadmill. This is due to the lack of wind resistance, terrain changes and because the treadmill belt helps propel him along. In order to compensate for the treadmill's momentum, studies have found that simply raising the treadmill incline to at least one percent will better simulate the energy expenditure of walking or running on flat pavement outdoors.

There are, however, a few great reasons to use a treadmill as a part of the training. No weather, temperature, or terrain issues. Can stop anytime they need or want, can work out while watching TV if he like, Smooth, cushioned surface is easier on the joints, no concerns about personal safety (<http://sportsmedicine.about.com/od/tipsandtricks/a/treadincline.htm>).

Forward pulled running on a treadmill is known to increase mechanical and decrease metabolic constraints relative to normal running (Avogadro et al., 2003). When an athlete runs on

the track, on roads or on firm ground, their legs create propulsive forces which accelerate their centre of mass and drive it forward. The athlete's centre of mass is decelerated during each recovery (early-stance) phase of the gait cycle, only to be accelerated forwards again as propulsive forces are created by the stance leg. As they continue to run, centre of mass is accelerated and decelerated over and over again as it moves steadily forwards.

Forward Running may be challenging, but it is an activity humans were designed to do—and it's something nearly everyone can enjoy if we allow time and patience for our bodies to adapt to the demands of the sport. But that doesn't mean that proper running form come naturally.

Methodology:For this study, out of ninety students, twenty male subjects were selected randomly from P.G.G.I.P.E, Banipur. The age of the subjects ranged between 21 to 27 years. Further the subjects were divided into two equal groups N=20, namely Group - A (Forward Treadmill running) and Group - C (Control group). To find out the Comparative effect of Forward Treadmill Running on Flexibility and Muscular Power of Sports Related Persons, Random group design was adopted for this study. The selected physical fitness components undertaken for this study were Front to Rear split test Flexibility and Side split test Flexibility and Standing Broad jump for Muscular power. The pre-test data was collected prior to the administration of experimental training programme and after the completion of the training programme the post-test was conducted and the data was collected in the evening respectively at the laboratory of P.G.G.I.P.E., Banipur. In order to investigate the existence of significant difference between experimental groups i.e. Group-A (Forward Treadmill running), and Control group i.e. Group- 'C' on Flexibility and Muscular Power of sports related persons in pre- post- and adjusted post test result, the analysis of Co-variance statistic was used. In case of existence of significant differences, the post hoc test (L.S.D. test) was used in order to investigate the significant differences between the paired group means. For the purpose of the present study, the level of significance was set at 0.05 level of confidence which was deemed reasonable for the present study.

Administration of training programme:A Ten weeks training schedule, where three alternative days in a week; Monday, Wednesday and Friday for Forward Treadmill Running i.e. Group-A was prepared by the researcher with the help of supervisor and other coaching professionals. Further the Control Group i.e Group –C was given no training schedule.

Findings

Flexibility (Front to Rear Split Test)

Table-01
Analysis of Co-variance of the means of Front to Rear Split Test
between Experimental group and one Control group

Mean	Forward running	Control	Source of Variance	SS	d f	MSS	F - ratio
Pre-Test	13.1 2	10 .6 5	Among	61.26	1	61.26	2.98
			Within	779.9 8	3 8	20.53	
Post-Test	10.5 5	10.06	Among	2.40	1	2.40	0.08
			Within	1100. 92	3 8	28.97	
Adjusted Post Test	11.8 8	9. 28	Among	38.87	1	38.87	5.12*
			Within	281.1 0	3 7	7.60	

*significant at 0.05 level of confidence.

F_{.05} (1 , 38) = 4.10 A = Among means variance.

F_{.05} (1 , 37) = 4.10 W = Within group variance.

Flexibility (Side Split Test)

Table-02
Analysis of Co-variance of the means of Side Split Test between
Experimental group and one Control group

Mean	Forward running	Control	Source of Variance	SS	df	MSS	F - ratio
Pre-Test	20.06	18.93	Among	12.77	1	12.77	0.65
			Within	749.21	38	19.72	
Post-Test	20.85	17.28	Among	127.45	1	127.45	3.76
			Within	1287.88	38	33.89	
Adjusted Post Test	19.49	20.27	Among	57.53	1	57.53	4.17*
			Within	510.38	37	13.79	

*significant at 0.05 level of confidence.

$F_{.05}(1, 38) = 4.10$ A = Among means variance.

$F_{.05}(1, 37) = 4.10$ W = Within group variance.

Muscular Power (Standing Broad Jump)

Table-03
Analysis of Co-variance of the means of Standing Broad Jump Ability between Experimental group and one
Control group

Mean	Forward running	Control	Source of Variance	SS	df	MS	F - ratio
Pre-Test	88.67	90.27	Among	25.47	1	25.47	0.63
			Within	1539.60	38	40.52	
Post-Test	90.15	89.75	Among	1.60	1	1.60	0.04
			Within	1542.30	38	40.59	
Adjusted Post Test	89.47	90.90	Among	35.54	1	35.54	7.27*
			Within	180.96	37	4.89	

*significant at 0.05 level of confidence.

$F_{.05}(1, 38) = 4.10$ A = Among means variance.

$F_{.05}(1, 37) = 4.10$ W = Within group variance.

Discussion of the findings

As per the findings of the tables are concerned to investigate the effect of Forward Treadmill running in some variables undertaken were found significantly improved.

To say specifically the variables like Flexibility (Side Split) was improved significantly with the effect of Forward Treadmill Running. The researcher attributed that through Forward Treadmill running stretch ability of the Quadriceps group of muscles along with the ligaments involved were enhanced. A more erect posture is observed during performance

. Reduced range of motion at the hip joint with greater flexion and lesser extension. Increased active / functional range of motion at the knee joint. A combination of maximum knee extension with hip flexion. Elimination of eccentric knee joint flexion, i.e., the knee joint exhibits greater flexion at touchdown followed by a nearly isometric / fixed position during initial stance. Toe-heel foot contact patterning. Modification of lower extremity muscular activity. Facilitation of balance and proprioception. Improvement of muscle balance (agonist / antagonist relationships). Development of a stronger foundation upon which to improve performance (due to improved muscle balance Facilitation of neuro-muscular function. Assistance in prevention of injuries (Arata, 1999).

Further the variables like Muscular power were found significantly different due to the effect of Forward Treadmill Running. The result attributed to increase in muscle strength as a result of using specialized treadmill training program, this result come in agreement with some author (Thelen and Ulrich, 2006) who reported that, the treadmill intervention offered repeated opportunities to improve the balance and build muscle strength in the lower limbs which are involved in the generation of more independent and mature walking.

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Effects Of Protein Supplementation On Selected Physical Fitness, Physiological And Biochemical Variables Among Athletes, Volley Ball And Basket Ball Players Of Sports School

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ABSTRACT

The purpose of the study was to find out the, effect of protein, supplementation along with the regular physical fitness training given to experimental groups on selected physical, physiological and biochemical variables.

It was hypothesized that physical fitness training and supplementation process may improve the selected physical fitness variables, physiological and biochemical variables. It was also hypothesized that there may be significant difference among the control and experimental groups. It was also hypothesized that there may be significant difference among 'volleyball players, basketball players and athletes who took whey protein supplementation. It was also hypothesized that there may be significant difference among volleyball players, basketball players and athletes who took casein protein supplementation.

The study was delimited to the following aspects.

1. 15 volleyball players, 15 basketball players and 15 athletes were randomly selected from Swami Sivanandha Sports School.
2. Their age group is ranged from 13 to 15 years.
3. The nutrient rich foods stuffs were selected and formulated and it was given as supplementation in the training period.
4. Regular physical fitness training followed by sport school students was followed.
5. The study was conducted only on sports school students.
6. The supplementation was given for a period of three months.

INTRODUCTION

Nutrition science seeks to explain metabolic and physiological .responses of the body to diet. With advance molecular biology, biochemistry and genetics, nutrition science is additionally developing into the study of integrative metabolism, which seeks to connect diet and health through the lens of biochemical processes. The three basic conditions that must be observed to maintain the top physical efficiency and performance as stated y margin are

1. The general unimpaired physical and mental health.
2. Adaptation to control environment.
3. Good nutrition with adequate quantities of calories, protein, fat, carbohydrate, vitamins and fluid.

The human body is make up of chemical compounds such as water, amino acids (proteins), fatty acids (lipids), nucleic acids (DNA/RNA) and carbohydrates (e.g: sugars and fiber). These compounds in turn consist of elements such as carbon, hydrogen, oxygen, nitrogen and phosphorous, and may or may not contain minerals such as calcium, iron or zinc. Minerals ubiquitously occur in the form of salts and electrolytes. All these chemical compounds and elements occur in various forms and combinations (e.g hormones i vitamins, phospholipids, hydroxyapatite), both in human body and in organisms (e.g. plants, animals) that humans eat.

The contribution that nutrition can make to the general health of any individual which has been generally accepted has not been given the attention it deserves. As the saying "A sound mind in a sound body", it is needless to say that one can never think or act promptly that person is in ill health or malnourished. Good nutrition is therefore vital to optimal event performance. Physical activity is essential for normal development in early adolescence. It is because of this, physical training is generally accepted and recommended as an essential part of school (Driskell, and Wolinsky 2002). Exercise alone cannot be beneficial to the body. Proper exercise and balanced diet are the true basic necessities for a healthy man. fitness is a combination of heart and muscle capacity to use oxygen for energy production. Nutrition and well being hence assumes a vital role in the field of sports (Rosales, 1994).

METHODOLOGY

In this chapter the selection of the subjects, selection of variables, reliability of instruments, competency of the tester, reliability of data, orientation of subjects, collection of the data, administration of the tests, the experimental design and the statistical procedures have been presented.

Selection of the Subjects

The purpose of this study was to find out the effect of protein Supplementation on selected physical fitness, physiological and biochemical variables. To achieve this purpose, forty five male sportsman in the age between 12 to 16 years were selected for the study. 15 athletes, 15 basket ball players, and 15 volley ball players from Ramakrishna Mission Swami Sivanandha sports school were randomly divided into groups.

Research Design

Random groups design is adapted in this study as the investigator was particular to make a thorough analysis to find out, whether there is any significant improvement in the mean level of the group in selected physical fitness physiological and biochemical variables. The subjects were divided into three groups. Each group consisted of 5 athletes, 5 basketball players and 5 volley ball players. Experimental group I took whey protein and experimental group II took casein protein and group III acted as a control group.

Selection of Variables

The following physical, physiological and biochemical variables were selected. The three groups undertook their training in their concerned discipline. The pretests were taken in the selected physical fitness physiological and biochemical variables. The supplementation and training prolonged for a period of 12 weeks. Then post test were conducted in the same variables for all the groups.

In the present study the following factors were selected as variables.

S. No	Variables
1	Physical Fitness Variables 1. Speed 2. Muscular Endurance 3. Strength
2	Biochemical Variables 1. Serum protein 2. Hemoglobin
3	Physiological Variables 1. Vital Capacity 2. Blood Pressure systolic and diastolic

Selection of Tests

In this study the variables were measured by administering the following tests related test to assess each of the selected variables has been indicated below.

Table for Testing Components and Test Items

S.No	Variables	Tests/Equipments
1	Physical Fitness Variables Speed Muscular Endurance Strength Cardiovascular Endurance Fat free Body Weight	50 yard dash Sit ups Pull ups 600 Mts run Skin fold caliper
2	Biochemical Variables Hemoglobin Serum Protein	Cyanmethemoglobin and Burette method
3	Physiological Variables Vital Capacity Blood Pressure	Spirometer Sphygmomanometer

CONCLUSIONS

From the results of the study the following conclusions were drawn.

1. Significant difference was found among the paired means of whey protein group, casein protein group and control group irrespective of the game in physical variables of speed, cardiovascular endurance, muscular endurance; strength, fat free body weight, in physiological variables of systolic blood pressure, diastolic blood pressure and vital capacity and biochemical variables of hemoglobin.
2. Significant difference was found among the paired means of volleyball players, basketball players and athletes irrespective of group in the physical variables of cardiovascular endurance muscular endurance and strength and biochemical variables of serum protein. However there was no significant difference in the physical variables of speed and Fat free body weight.
3. Significant difference was found among the paired means of groups and games-interaction in the physical variable of speed, muscular endurance, cardiovascular endurance, vital capacity, strength, diastolic blood pressure and serum protein. There was no significant difference in the variables of systolic blood pressure, hemoglobin and fat free body weight.
4. Volleyball players, basketball players, and athletes had equal level of improvement due to whey protein supplementation in speed, and equal level of reduction in diastolic blood pressure. Volleyball players had significant improvement than athlete and basketball players in muscular endurance and strength. They had significant improvement than basketball players in cardiovascular endurance also. Athletes had significant improvement than the basketball players in cardiovascular endurance and strength and than volleyball players in serum protein and strength. Basketball players had significant improvement than volleyball players in vital capacity.
5. Volleyball players, basketball players and athletes had equal level of improvement due to casein protein supplementation in cardiovascular endurance, serum protein and vital capacity. Volleyball players had significant improvement than basketball players in speed.
6. The whey protein supplementation volleyball group had significant improvement than the control group in speed, cardiovascular endurance, muscular endurance, strength, vital capacity, and serum protein and significant reduction in diastolic blood pressure. It had significant improvement than the casein protein group in muscular endurance, cardiovascular endurance and strength.
7. The whey protein supplementation basketball group had significant improvement than the control group in speed, cardiovascular endurance, muscular endurance, strength, vital capacity and serum protein and significant reduction in diastolic blood pressure. It had significant improvement than the casein protein supplementation group in speed, strength, vital capacity and muscular endurance, serum protein and strength and has no significant improvement than the control group in cardiovascular endurance, muscular endurance, serum protein and strength and had no significant improvement in speed and diastolic blood pressure.
8. The whey protein athletes had significant improvement than the control group in cardiovascular endurance, muscular endurance, strength, speed and serum protein but had no significant improvement in speed, and no significant reduction in diastolic blood pressure.

Physical,Physiological Cognitive And Bio-Chemical Variables Of Forestry Graduates

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ABSTRACT

Yoga and Aerobic practices awaken the mental and physical strength, Yogasanas, if done regularly and with proper preparations, they lead their full benefit to the fitness of the body and mind. Yoga helps to perform hard tasks confidently and successfully. It improves the functioning of veins and arteries. On the whole yoga can be a powerful enhancement in regular training exercises. The special feature of the Yogasanas is that what they do for the body, they do for the mind also in an effective way. Physical fitness can be excellently maintained by practicing in a selected yogic routine. The purpose of the study forty five forestry graduates were selected randomly from the group of eighty. The subjects' age ranged from 18 years to 23 years. They were examined by a qualified medical practitioner and were found to be medically and physically fit to participate in the training program. The subjects were fully residential and hence there was no difference in their feeding habits and life pattern and hence were considered as a homogeneous group. The selected subjects (N=45) were divided into three groups equally and randomly. Of which experimental Group I underwent Yogasanas Training, Experimental Group II underwent Aerobics training and Group III acted as Control Group. All the two experimental groups were treated with their respective training for one and half hour per day for three days a week for period of sixteen weeks.

INTRODUCTION

Ever since this universe came into existence, the main interest and desire of man is searching and searching. He had his own thirst to find out new inventions. The research method and field may be different but the ambition is the same. The scientific research in the field of yoga, Sports and Games is a precious boon to the athletes, research scholars and society. Yoga is unique and indents in all parts of the world. Since the dawn of the human civilization on the banks of the rivers, valleys, villages and cities yoga, sports and games continue to play an important role in human life. Yoga is the panacea for a man to free from ailments. Man is born to live in hale and healthy. Man is his ignorance is really not aware of what real strength is. Physical fitness and health are real strength of a man. Every individual spends a considerable amount of time at the work place and devotes the greater part of life to learn and gain extensive Knowledge. For this, he spends his Energy, physical and mental resources to fulfill his endeavor. Research provides an opportunity for an individual to hunt and find more and more for the need and development. The future of Physical Education as an Academic subject and its acceptability at the college or university level is largely depend upon the manner in which we attempt to justify our practices and present a logical reason for what we do the overall development of the students community. We are born to live in happiness. Our body and mind are not being tortured by diseases. Illness of the body will affect mind also. The body is the temple of soul and to reach a harmony of the mind, body and spirit, the body must be physically fit (Charles A Bucher). The human body is built for physical movement. Through the ages, man has to be physically active in order to procure his daily food t succeed in the battle for survival. Yoga involves physical and mental activities. This is one of the ways in which physical development is exercised. It trains a person to face competitions and challenges boldly. Human body is built for physical activity and movement.

Yoga training activities big muscle activities. In many countries Yoga has been included as a physical activity. Yogasanas develop various Physical Fitness components like Abdominal Strength, Speed, Shoulder Strength, Explosive Power, Hand Grip Strength and Flexibility.

METHODOLOGY

The procedure adopted involves the sources and selection of subjects, selection of criterion variables, experimental design, reliability of data and tester competency, instrument reliability, orientation to the subjects, pilot study, training program schedule, test administration, collection of data and statistical analysis are explained.

SELECTION OF SUBJECTS

To achieve the purpose of the study forty five forestry graduates were selected randomly from the group of eighty. The subjects' age ranged from 18 years to 23 years. They were examined by a qualified medical practitioner and were found to be medically and physically fit to participate in the training programme. The subjects were fully residential and hence there was no difference in their feeding habits and life pattern and hence were considered as a homogeneous group.

EXPERIMENTAL DESIGN

The selected subjects (N=45) were divided into three groups equally and randomly. Of which experimental Group I underwent Yogasanas Training, Experimental Group II underwent Aerobics training and Group III acted as Control Group. All the two experimental groups were treated with their respective training for one and half hour per day for three days a week for period of sixteen weeks.

SELECTION OF CRITERION VARIABLES

Yoga and Aerobic practices awaken the mental and physical strength, Yogasanas, if done regularly and with proper preparations, they lead their full benefit to the fitness of the body and mind. Yoga helps to perform hard tasks confidently and successfully. It improves the functioning of veins and arteries. On the whole yoga can be a powerful enhancement in regular training exercises. The special feature of the Yogasanas is that what they do for the body, they do for the mind also in an effective way. Physical fitness can be excellently maintained by practicing in a selected yogic routine. The impurities which are formed due to wear and tear of the body are sent out properly through the outlets besides strengthening the organs which are responsible for our life, while building strength, power and flexibility. Aerobics is a good way to decrease percentage of body fat and to attain the other metabolic benefits of fitness. Aerobics increases red blood cells count, which contains hemoglobin that is responsible for transporting oxygen in the blood, a decrease in resting blood pressure and a decrease in blood lipids. A regular aerobic exercise programme will cause a reduction in blood fats such as cholesterol and triglycerides. Aerobics builds stamina and increases the efficiency of bones, joints, muscles, blood circulation, respiratory, feeding, urine and nerve centers, organs and glands. Yogasanas and Aerobics were selected as independent variables. The investigator reviewed the available scientific literatures, journals, periodicals, magazine and research papers pertaining to the study and selected the following dependent variables to the investigation.

VARIABLES AND CRITERION MEASURES

S. No	PHYSICAL FITNESS VARIABLES	CRITERION MEASURES
1	Abdominal Strength	Bent Knee Sit Ups
2	Speed	50 Meters Dash
3	Shoulder strength	Pull Ups
4	Explosive Power	Vertical Jump
5	Hand Grip Strength	Hand Grip Dynamometer
6	Flexibility	Sit and Reach Test

S. No	PHYSIOLOGICAL VARIABLES	COGNITIVE MEASURES
1	Breath Holding Time	Voluntary Forced Inhalation and Holding
2	Resting Heart Rate	Pulse Count
3	Diastolic Blood Pressure	Sphygmomanometer
4	Oxygen Consumption (VO2 Max)	Running on Tread mill and using Benedict Roth Spiro Meter

S. No	COGNITIVE VARIABLES	COGNITIVE MEASURES
1	Concentration	Multiple Test
2	Memory	Observation Test
3	Mental Fatigue	Cancel Action Test

S. No	BIO-CHEMICAL VARIABLES	CRITERION MEASURES
1	Blood Cholesterol	Measured at Hospital Laboratory
2	Low Density Lipoprotein Cholesterol	Measured at Hospital Laboratory
3	High Density Lipoprotein Cholesterol	Measured at Hospital Laboratory
4	Triglycerides	Measured at Hospital Laboratory
5	Total Protein	Measured at Hospital Laboratory

TOOLS USED FOR THE STUDY AND RELIABILITY OF INSTRUMENTS

Standard equipments were used for this study. Benedict Roth Spiro Meter, Tread Mill, Hand Grip Dynamometer, Stop Watch, Stethoscope and Electronic Sphygmomanometer were utilized from the Department of Farm machinery, College of Agricultural Engineering, Coimbatore. For Bio-Chemical variables Shakthi Nursing Home Clinical Laboratory was utilized. These instruments were procured from the standard scientific companies and were accepted as accurate enough from the purpose of this study.

CONCLUSIONS

The following conclusions have been made from the results of the statistical analyses. Yogasanas and Aerobic Trainings have highly effective in the improvement of abdominal strength, Speed, Shoulder strength, Explosive power, hand grip strength and Flexibility when compared to the control group.

Significant improvements were found in the Yogasanas and aerobic training groups when compared to the control group towards improving the selected criterion variables viz., Breath holding time, Resting heart rate, Diastolic blood pressure and Oxygen consumption (VO2) Max.

The experimental groups of Yogasanas and Aerobic Training Groups have achieved significant improvement on concentration, Memory and Mental Fatigue as compared to control group.

Significant improvements were found between Yogasanas and Aerobic training groups when compared to the control group towards improving the selected criterion variables such as Blood cholesterol, Low density lipoprotein cholesterol. High density lipoprotein cholesterol, triglycerides and Total protein.

It is found that the yoga training group is found to be better than the aerobic training in improving the Breath holding time, Resting heart rate, Diastolic blood pressure, Oxygen consumption (VO2 Max), Concentration and Memory and reducing Mental fatigue.

Effect Of Sport Loading Programme On Strength Endurance Among School Level Sprinters

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ABSTRACT

The aim of the study was to determine the effect of sport loading programme on strength endurance among school level sprinters. For this study 40 school level male sprinters who were studying in various school of Cuddalore district were randomly selected as subjects. As per the records, their age ranged from 15 to 17 years. The selected subjects were divided into two groups and each group consisted of twenty subjects (N=20). Group I underwent sport-loading programme for three days per week for eight weeks. Group II acted as control who did not participate any special training apart from their regular physical education programme in the curriculum. Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control groups as a result of sport loading programme. The level of significance of the test “F” ratio obtained by the analysis of covariance was fixed at 0.05 level of confidence. The result of this study showed that there was significant improvement on strength endurance due to the 12 weeks of sport loading programme which was followed in this study.

Keywords: Sport loading programme, Strength Endurance

INTRODUCTION: Strength endurance is all forms of physical activity which, through casual or organised participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sport may be competitive, where a winner or winners can be identified by objective means, and may require a degree of skill, especially at higher levels. Hundreds of sports exist, including those for a single participant, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. Sports are usually governed by a set of rules or customs. Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and bodybuilding, where skill does not have to be shown and the criteria are not as well defined. Strength training is an essential element of fitness for virtually every sports man and woman. Long gone are the days when coaches believed resistance exercises only added unnecessary bulk to the athlete, hindering their ability to execute skill. The benefits of strength training to athletic performance are enormous and many. Not only is it an integral conditioning component for power athletes such as football and rugby players, performance in the pure endurance events can be improved with a well-structured strength routine.

However, aside from perhaps bodybuilders, sport-specific resistance training requires a more refined approach than simply lifting heavy weights to complete exhaustion. A physiological analysis of any game or event will confirm that most athletes require explosive power, muscular endurance, maximal strength or some combination of all three in order to excel. Rarely is pure muscle bulk the primary concern and when it is, other elements of strength are equally as important. Strength endurance of muscle contraction is an innate quality but strength endurance of movement can be gained through movement. Strength endurance is a valuable factor in games like football, basket ball, hockey and track events. Generally the higher team wins because it is

the fastest team. Strength Endurance is the measure of under condition of fatigue. It appears that proper strength and conditioning exercise programs may increase athletic performance, improve physiological function and reduce the risk of injuries. These effects are as beneficial to female athletes as they are to males. The question that has to be addressed is whether female athletes require different training modalities, programs or personnel than those required by male athlete. The ability to resist a force over time or to make repeated muscle contractions against a force. Strength endurance is a measure of the ability of a muscle or muscle group to work continuously. It has a meaning similar to muscle endurance, but with strength endurance there is a greater emphasis on the amount of the force which can be resisted. Strength and Endurance Performance Institute (SEPI), was founded by former Special Operations Force Reconnaissance Marine and Professional Triathlete Terry Butts in 1995 with the vision of training athletes, military personnel and individuals of all abilities via the internet, and in 2005 SEPI opened its first performance facility in Lafayette, LA. Since this time Terry and his staff have trained 21 High School Athletes who have received D-1 scholarships, Current and former NFL athletes, Professional Moto-Cross riders, Endurance athletes and hundreds of everyday people looking to get fit, lose weight and increase their quality of life.

Methodology

Subject: To achieve the purpose of this study Forty school level sprinters (N=40) who were studying in various school of Cuddalore district, Tamil Nadu were randomly selected as subjects. As per the records, their age ranged from 15 to 17 years. The selected subjects were divided into two groups and each group consisted of twenty subjects (N=20). **Groups and Training:** Group I underwent sport-loading programme for three days per week for twelve weeks. Group II acted as control who did not participate any special training apart from their regular physical education programme in the curriculum. Every day the workout lasted for out 45-60 min warm-up and cool-down exercise. **Variable:** The selected independent variable was Sport loading programme and dependent variable was Strength Endurance. The data was collect on strength endurance measured by using Bend knee Sit-ups at before and immediately after the sport loading programme as the pre and post test **Research design:** In the present study random group design was used. **Statistics:** Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control group as a result of sport loading programme. The level of significance of the test "F" ratio obtained by the analysis of covariance was fixed at 0.05 level of confidence.

RESULT AND DISCUSSION

Analysis of Strength Endurance

Analysis of covariance of data on strength Endurance between pre and post-tests of experimental and control group is given in table I

Analysis of Strength Endurance Analysis of covariance of data on strength endurance between pre and post-tests of experimental and control group is given in table I.

TABLE – I :ANALYSIS OF COVARIANCE OF DATA ON STRENGTH ENDURANCE BETWEEN PRE AND POST-TESTS OF EXPERIMENTAL AND CONTROL GROUP

Test	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test							
Mean	32.00	32.65	Between	4.23	1	4.23	0.16
S.D.	4.97	5.42	Within	1028.55	38	27.07	
Post-test							
Mean	39.50	33.10	Between	409.60	1	409.60	24.51*
S.D.	2.95	4.97	Within	634.80	38	16.71	
Adjusted Post-test							
Mean	39.70	32.90	Between	459.97	1	459.97	67.25*
			Within	252.95	37	6.84	

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 1 and 38 & 1 and 37 are 4.096 and 4.109 respectively).

Table I shows that the pre-test mean values on strength endurance for experimental and control group were 32.00 and 32.65 respectively. The obtained "F" ratio value 0.16 for pre-test scores on strength endurance which was less than the required table value 4.096 for significance with df 1

and 38. The post-test mean values on strength endurance for experimental and control group were 39.50 and 33.10 respectively. The obtained “F” ratio value 24.51 for post-test scores on strength endurance which was greater than the required table value 4.096 for significance with df 1 and 38. The adjusted post-test mean values on strength endurance for experimental and control group were 39.70 and 32.90 respectively. The obtained “F” ratio value 67.25 for adjusted post-test mean values on strength endurance which was greater than the required table value 4.109 for significance with df 1 and 37. The results of the study showed that there was a significant difference between experimental and control group on strength endurance. Further the results of the study showed that there was a significant improvement on strength endurance due to sport loading programme, which was followed in this study. However the improvement was in favour of experimental group. The adjusted post-test mean values of experimental and control group on strength endurance are graphically presented in Figure I

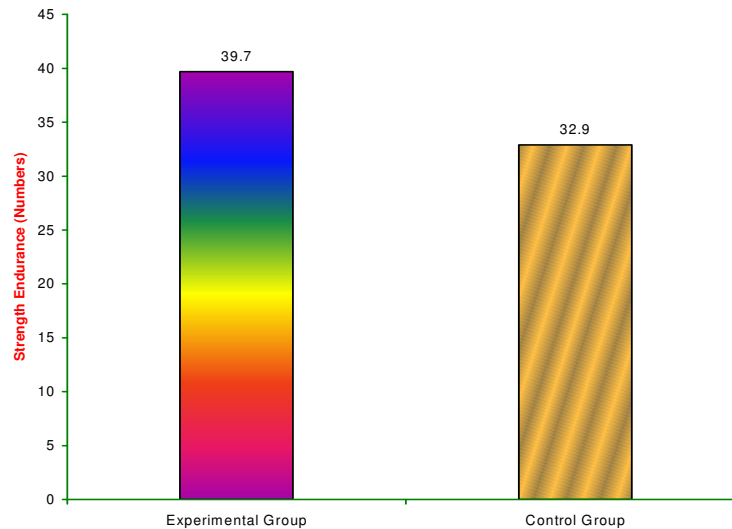


Figure I: The adjusted post-test mean values of experimental and control group on strength endurance

CONCLUSION

In this study the analysis of data shows there was a significant difference among experimental group, and the control group on strength Endurance as well as a significant improvement on strength Endurance. However, the improvement was in favour of experimental group due to twelve week of sport loading programme.

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Effects Of Circuit Resistance Training And Plyometric Training On Strength Among Players

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Abstract

The purpose of the study was to find out the effects of circuit resistance training and plyometric training on strength among players. Forty five male ($n = 48$) amateur netball players were randomly selected as subjects and their age ranged from 18 to 22 years. The selected subjects were randomly assigned into three equal groups of fifteen subjects each ($n = 15$), namely experimental group I was underwent circuit resistance training (CRG), group II underwent plyometric training (PG) was designed by the investigator and was administered for a period of 8 weeks 3 days a week, a session each day, and group III control was not exposed to any specific training (CG). Strength was selected as variable for this study. Analysis of covariance (ANCOVA) was used to analyse the data. Scheffe's test was used as a post hoc test to determine which of the paired mean difference significantly. The result of the study revealed that both circuit resistance training (CRG) and plyometric training (PG) produced significant improvement on strength ($p \leq 0.05$) as compared to CG.

Keywords: Circuit resistance training, Plyometric training, leg strength

Introduction

Circuit training is an interval-training technique that minimizes rest between sets and exercises. It can consist of only weight training or alternating intervals of weight training and brief, high-intensity cardiovascular exercise. Resistance training programme act as an integral part of a total strength and conditioning programme for the enhancement of athletic programme and also prescribed by major health organizations, recreational and clinical communities for improving health, fitness and also in rehabilitation. (ACSM, 2002). Circuit resistance training is the practice of doing exercises with resistance and moving simultaneously from one to the next with no real break in between exercises. It is a combination of _____ and _____. Typically, it involves working at 40-60% of maximum strength for 30-s with a 15-s recovery period. It can also increase muscle mass and decrease body fat content. It has been become the most widely accepted method for improving muscular strength and power (Kraemer & Ratamess, 2004). The increases in muscular strength during the initial periods of a resistance training program are not associated with changes in cross-sectional area of the muscle (Sale, 1988). Changes in strength evidenced in the first few weeks of resistance training are more associated with neural adaptations (Moritani & deVries, 1979), which encompass the development of more efficient neural pathways along the route to the muscle.

Plyometric is a type of exercise training designed to produce fast, powerful movements and improve the functions of the nervous system, generally for the purpose of improving performance in sports – plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscles and surrounding tissue to jump higher and run faster, depending on the desired training goal (Goran, 2007). It is a high intensity work out and only well conditioned athletes should use them as training tool and it is used to enhance the ability of muscles to generate power (Chu, 1998). Plyometric training exaggerates the stretch- shorten cycle (SSC), using activities such as jumping, hopping, and bounding. This suggests that plyometric training improves the ability of muscles to return elastic energy during the SSC. A plyometric contraction involves first a rapid muscle lengthening movement (eccentric phase), followed by a short resting phase (amortization phase), then an

explosive muscle shortening movements (concentric phase), which enables muscles to work together in doing the particular motion (Goran, 2007).

Strength is the ability to act against resistance. It is, in fact, a product of voluntary muscle contractions caused by the neuro-muscular system (Singh, 1991). Strength is one of the most important components of physical fitness, which affects performance in almost all games and sports in some form or the other. The primary objective of strength in training is not to learn to lift as much weight as possible but to increase strength for application to the relevant sport. Leg strength is the capacity of the lower limb to exert muscular force (Baugartner & Jackson, 1987). Leg strength is very essential for sports persons, especially athletes. The strength of a muscle related to its sectional area or girth. In this study the leg dynamometer is the instrument used to measure the leg strength. The capacity of lower limb to exert muscular force, the leg strength is measured by the limits of lifting resistance in lowering to and arising from sitting position (Johnson & Nelson, 1982).

Materials and Methods

The purpose of this study was to determine the effects of circuit resistance training and plyometric training on strength among players. Forty five amateur male (n = 45) netball players studying different department of Annamalai university, Tamil Nadu were selected as subjects and the age of students were between 18 and 22 years. The selected subjects were randomly divided into three equal groups of fifteen subjects each (n = 15). The groups were circuit resistance training group (CRG), plyometric training group (PG) and one control (CG). During the training period, the experimental groups underwent their respective training programme for eight weeks 3 days per week and a session on each day. Control group (CG) was not exposed any specific training apart from their regular curriculum. Moderate intensity (60-70%) of resistance was used in this experimentation. Leg strength was selected as dependent variable for this study. It was measured by using leg lift with dynamometer. These are the exercise used as resistance 1.push ups 2. half squat 3.push press 4. heel raises 5.power clean 6.leg curl 7.medicine ball push 8.sit ups. 9. arm curl 10. squat jump. These plyometric exercises are used to perform this study for strengthening the lower body 1. drop jump; 2. tuck jump; 3. split jump; 4. bounding; 5. single leg hop; 6. hurdling; 7. medicine-ball exercises; 8. stepping. 9. box jump.

Data Analysis

Mean and standard deviation were calculated for leg strength for each training group. And the data were analyzed by using analysis of covariance (ANCOVA). If the 'F' value was found to be significant for adjusted post-test mean, Scheffe's test was applied as post hoc test to determine the significant difference between the paired mean. Statistical significance was set to priority at 0.05 levels.

Results

Table – I

ANALYSIS OF COVARIANCE ON LEG STRENGTH OF EXPERIMENTAL GROUPS AND CONTROL GROUP

Test	CRG	PG	CG	SOV	SS	df	MS	F
Pre-test								
Mean	80.13	80.67	78.53	B G	36.98	2	18.49	0.98
S.D (±)	4.37	4.45	4.17	W G	788.8	42	18.78	
Post-test								
Mean	91.73	87.73	79.53	B.G	1160.4	2	580.2	24.78*
S.D (±)	5.44	4.46	4.55	W G	983.6	42	23.42	
Adjusted Post-test								
Mean	91.75	87.77	79.49	B G W G	1135.89 982.53	2 41	567.95 23.96	23.7*

*Significant, $F = (df\ 2, 42) (0.05) = 3.22$; ($P \leq 0.05$), $F = (df\ 2, 41) (0.05) = 3.225$; ($P \leq 0.05$)

Table I shows that the pre test mean of experimental and control groups are 80.13, 80.67 and 78.53 respectively. The obtained F ratio of 0.98 for pre test mean is lower than the table value 3.22 for df 2 and 42 required for significance at 0.05 level.

The post tests mean of experimental and control groups are 91.73, 87.73 and 79.53 respectively. The obtained F ratio of 24.78 for post test mean is higher than the table value 3.22 for df 2 and 42

required for significance at 0.05 level. The adjusted post test mean of experimental and control groups are 91.75, 87.77 and 79.49 respectively. The obtained F ratio of 23.7 for adjusted post test mean is higher than the required table value 3.225 for df 1 and 41 required for significant at 0.05 level. The result of the study indicated that there was a significant difference between the adjusted post tests mean of circuit resistance training group, plyometric training group and control group on leg strength at 0.05 levels. Since, three groups were compared, whenever they obtained 'F' ratio for adjusted post test was found to be significant, the Scheffe's test was used to found out the paired mean difference and it was presented in table II.

Table II. Scheffe's post hoc test for the difference between paired mean on leg strength

CRG	PG	CG	MD	CI
91.75	87.77		3.98	
91.75		79.49	12.26*	4.54
	87.77	79.49	8.28*	

*Significance at 0.05 level of confidence ($p \leq 0.05$).

Table II showed that the adjusted post test mean difference on leg strength between circuit resistance training group and control group and plyometric training group and control group are 12.26, and 8.28 respectively. These values are higher than the required confidence interval value of 4.54, which shows significant difference at 0.05 level of confidence. The results of the study showed that there was a significant difference between circuit resistance training group and control group and plyometric training group and control group. The pre, post and adjusted post test mean values of experimental groups and control group on leg strength is graphically represented in the figure 1.

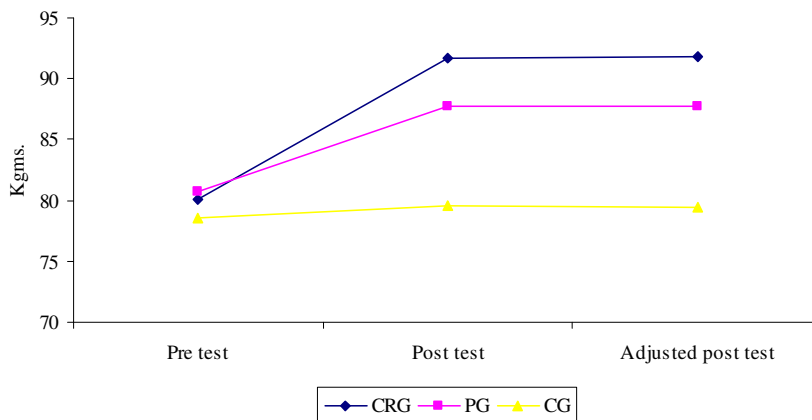


Figure 1: The pre, post and adjusted post test mean values of experimental groups and control group on leg strength

Discussion

The circuit resistance training group demonstrated greater increases in strength compared with the control group. Plyometric training is also help to improve leg strength strength at significant level. Many research studies revealed that the use of different training loads elicits different training adaptations and further it indicate that it also includes the volume specific adaptations in strength variable (Christou, 2006). Many research studies suggest that circuit resistance training may be valuable for determining the physical variables such as leg strength (Lesnegard *et al.*, 2010). Teixeira *et al.* (2001) pointed out that resistance training three times per week is an effective as five times per week. The development of leg strength as a result is supported by the findings of George & Thomas (2011). The various training components (E.g. sets, repetitions, rest, intervals) could be manipulated the training loads used from the most important factor that determine the training stimuli and the consequent training adaptations(Myer *et al.*, 2006). From the results of the present study and literature, it is concluded that the dependent variables such as leg strength was significantly improved due to the moderate intensity circuit resistance training plyometric training.

Conclusion

The result of this study suggests that resistance training modality targets the leg strength. Any practical application requires careful implementation and individual experimentation. In summary,

the leg strength can be improved during the age between 18 and 22 years of male students and favour the prescription of moderate intensity circuit resistance training and plyometric training during the initial adaptation period. There was no significant difference between circuit resistance training group and plyometric training group. From this study we can concluded that circuit resistance training is the top to improve leg strength followed by plyometric training. Finally, the studies presented in this review demonstrate that there was a significant improvement on leg strength due to moderate intensity circuit resistance training and plyometric training as compared to control group.

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Teacher Burn Out And Emotional Intelligence: A Relationship Study

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ABSTRACT

The aim of this study was to find out the relationship between Emotional Intelligence (EI) and teacher burnout of high school Teachers. Both male and female teachers were considered for this study that having at least three years teaching experience but their age was not considered. For this purpose two hundred teachers (hundred male and hundred female) were selected from four different districts of West Bengal. The data gathered were duly analyzed through statistical procedure. Coefficient correlation method was used to find out if any significance relationship exists between teacher burn out level and emotional intelligence between male as well as female teachers. 't' test was also applied to investigate the existence of significant difference between male and female teacher in respect of Burn out and Emotional Intelligence.

KEYWORDS: emotional intelligence, Burnout, high School Teachers.

INTRODUCTION

Education is one of the most important instruments of change in the life of a man. It helps man in enriching his life positively. It is also an instrument for economic empowerment, sustainable economy and national development.

As important as teachers are to the development of a nation, research works (Shirom, 1989; Wright & Cropanzano, 1998; Azeem, 2010) have shown that burnout is a major factor that hinders their efficiency, effectiveness and job involvement.

According to Bryne (1991) and Maslach, Jackson and Leiter (1996), the burnout syndrome has three distinct but loosely coupled dimensions: emotional exhaustion (feelings of being emotionally overextended and exhausted with one's work), depersonalisation (the development of negative and uncaring attitudes towards others), and negatives personal accomplishment (loss of feelings of self-competence and dissatisfaction with one's achievement).

Burnout can have damaging effects on individual's mental and physical health including exhaustion, physical pain, depression, sleep disturbances and even death (Ganster and Schaubroeck, 1991; Brock and Grady, 2002; Le Fevre, Matheny and Kort, 2003; Faragher et al. 2004;). It can also have negative effects on organisational outcomes such as performance and turnover (Cooper, 2002; Kondylis, et al., 2004; Tamini, 2009). Research works have also shown that burnout has negative consequences on teaching-learning processes (Palomera, Fernandez-Berrocal & Brackett, 2008), quality of teaching and students' performance.

As a result of the highlighted negative and harmful influences of burnout on teaching-learning process and outcome, researchers have become interested in identifying factors responsible for burnout among teachers. Factors found include excessive time pressure, poor relationship with colleagues, large classes, lack of human and physical resources, poor opportunities for promotion and lack of participation in decision-making, personality hardiness and job involvement (Friendman, 1991; Wolpin, et al. 1991; Azeem, 2010).

Emotional intelligence could not only be considered as an important factor in the teacher student relationship but also as a protective factor against burnout, like proactive coping, which makes teachers more resilient and less likely to suffer burn out. We are interested in finding the impact of proactive coping in the emotional intelligence–burnout relationship as well as whether the support from the supervisor would impact the association between emotional intelligence, proactive coping and burnout. It was hypothesized that emotional intelligence would be associated with lower levels of burnout, and it would be lead to higher proactive coping. A

negative link would exist between proactive coping and burnout. The influence of emotional intelligence on burnout would be mediated by proactive coping and supervisor support would moderate the impact of emotional intelligence on burnout through proactive coping.

Teachers high in emotional intelligence tend to be more caring of their students. They can better recognize student needs and they respond to these needs accordingly. They are also aware of their difficulties and their general emotions and they can promote them to make advances. Emotional intelligence seems to be the key factor in understanding the students, regarding what motivates them, what they desire and how teachers can work better with them. The students notice this and endeavor to work hard, in order to achieve their academic goals. They are, therefore, less likely to behave unacceptably. It seems that the more attention given by the teachers to the needs of their students, the less misconduct arises from their students. Emotional intelligence contributes to creating lower levels of misconduct from the students directly and through attention to student needs, which acts as a mediator.

For the said purpose the researcher find it essential to study the relationship between burn out and emotional intelligence. (Whether there is any significant relationship between burnout and emotional intelligence among high school teachers).

METHOD AND MATERIALS

SUBJECTS:

The study was descriptive survey type. Two hundred teachers (hundred male and hundred female) were selected randomly for this study without considering the age. These subjects were selected from four different Districts in West Bengal. A standardized questionnaire was used for measuring the teacher Burn out and Emotional Intelligence of high school teachers.

TEST/TOOLS:

Two instruments were used in the study. These include:

Emotional Intelligence Questionnaire (EIQ): It was developed by Schutte, et al. (1998). The items of EIQ are 33 in number. The items describe the ability, capacity, skill, a self-perceived ability to identify, assess, and control ones emotion and that of others. Each item's value is coded as 1 = strongly Disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = strongly Agree. The scores ranged from 33 to 165. The higher the score, the higher the emotional intelligence of the respondent.

Teacher Burnout Scale (TBS): It was developed by Richmond, Wrench, & Gorham (2001). Teacher's burnout scale items are 20 in number. Teacher's burnout has been viewed as a condition caused by depersonalization, exhaustion and a diminished sense of accomplishment. The symptoms of teachers' burnout could include: anxiety and frustration, impaired performance, and ruptured interpersonal relationships at work and home. These could result from long period of stress. The variables' value are coded as 1 = strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; and 5 = strongly Agree.

STATISTICAL PROCEDURE

A co-relational design was used to find out the pattern of relationship between the variables of emotional intelligence and burnout. Further, t-test was also completed to find the significance of difference between the male and female teachers on burnout and emotional intelligence.

TABLE -01

MEAN, S.D., AND COEFFICIENT CORELATION OF TEACHER BURN OUT AND TEACHER EMOTIONAL INTELLIGENCE

VARIABLES	SUBJECTS	MEAN	S.D.	R	REMARKS
Burn Out	Male(100)	48.56	7.40	0.066	Not significant
Emotional Intelligence	Male(100)	120.17	9.78		

*Not Significant at 0.05 level

*'R' value required to be significant at 0.05 level of confidence with 98 degree of freedom was 0.205

TABLE -02
MEAN, S.D., AND COEFFICIENT CORRELATION OF TEACHER BURN OUT AND TEACHER EMOTIONAL INTELLIGENCE

VARIABLES	SUBJECTS	MEAN	S.D.	'r'	REMARKS
Burn Out	Female(100)	57.38	8.275	0.312*	significant
Emotional Intelligence	Female(100)	92.38	9.66		

*Not Significant at 0.05 level.

**R' value required to be significant at 0.05 level of confidence with 98 degree of freedom was 0.205.

TABLE-03
MEAN SD AND T' RATION OF MALE, FEMALE TEACHER'S BURN OUT

VARIABLES	GENDER	NUMBER	MEAN	S.D.	' t'	REMARKS
Burn Out	Male	100	48.56	7.40	8.01*	Significant
Burn Out	Female	100	57.38	8.27		

*Significant at 0.05 level

**t' value required to be significant at 0.05 level of confidence with 198 degree of freedom was 1.96

TABLE-04

MEAN SD AND T' RATION OF MALE, FEMALE TEACHER'S EMOTIONAL INTELLIGENCE

*Significant at 0.05 level

VARIABLES	GENDER	NUMBER	MEAN	S.D.	' t'	REMARKS
Emotional Intelligence	Male	100	120.17	9.78	6.59*	Significant
Emotional Intelligence	Female	100	92.21	9.74		

**t' value required to be significant at 0.05 level of confidence with 198 degree of freedom was 1.96

DISCUSSION OF FINDINGS

Finally, the results of the present study showed that there were significant burnout differences among male females teacher of high school. In other words, female teachers' burnout level was significantly higher than that of males. These findings are in accordance with those of Borg and Riding (1991) and Lachman and Diamant (1987),

The present study also showed that there were also significant differences among male female teacher of high school. These findings are also in accordance with those of Chan (2006), Akbag and Berberyan (2011), Platsidou (2009).

According to Maslach and Jackson, 1981, burned out people suffer from emotional exhaustion, depersonalization and a reduced sense of personal accomplishment.

Emotional intelligence could not only be considered as an important factor in the teacher student relationship but also as a protective factor against burnout, like proactive coping, which makes teachers more resilient and less likely to suffer burn out. Emotional intelligence contributes to creating lower levels of misconduct from the students directly and through attention to student needs, which acts as a mediator.

The implication is that if secondary school teachers are given adequate training and exposed to enabling environment to develop high level of emotional intelligence so that burnout would be reduced. Ministries of Education in collaboration with each secondary school should have a well-planned training programme for the purpose of helping teachers understand their emotions and the emotions of others use the information to guide their thinking and actions.

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Effects Of Yogasanas Amd Aerobics Training On The Phsyical,Physiological Cognitive And Bio-Chemical Variables Of Forestry Graduates

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ABSTRACT

Yoga and Aerobic practices awaken the mental and physical strength, Yogasanas, if done regularly and with proper preparations, they lead their full benefit to the fitness of the body and mind. Yoga helps to perform hard tasks confidently and successfully. It improves the functioning of veins and arteries. On the whole yoga can be a powerful enhancement in regular training exercises. The special feature of the Yogasanas is that what they do for the body, they do for the mind also in an effective way. Physical fitness can be excellently maintained by practicing in a selected yogic routine. The purpose of the study forty five forestry graduates were selected randomly from the group of eighty. The subjects' age ranged from 18 years to 23 years. They were examined by a qualified medical practitioner and were found to be medically and physically fit to participate in the training program. The subjects were fully residential and hence there was no difference in their feeding habits and life pattern and hence were considered as a homogeneous group. The selected subjects (N=45) were divided into three groups equally and randomly. Of which experimental Group I underwent Yogasanas Training, Experimental Group II underwent Aerobics training and Group III acted as Control Group. All the two experimental groups were treated with their respective training for one and half hour per day for three days a week for period of sixteen weeks.

INTRODUCTION

Ever since this universe came into existence, the main interest and desire of man is searching and searching. He had his own thirst to find out new inventions. The research method and field may be different but the ambition is the same. The scientific research in the field of yoga, Sports and Games is a precious boon to the athletes, research scholars and society. Yoga is unique and indents in all parts of the world. Since the dawn of the human civilization on the banks of the rivers, valleys, villages and cities yoga, sports and games continue to play an important role in human life. Yoga is the panacea for a man to free from ailments. Man is born to live in hale and healthy. Man is his ignorance is really not aware of what real strength is. Physical fitness and health are real strength of a man. Every individual spends a considerable amount of time at the work place and devotes the greater part of life to learn and gain extensive Knowledge. For this, he spends his Energy, physical and mental resources to fulfill his endeavor. Research provides an opportunity for an individual to hunt and find more and more for the need and development. The future of Physical Education as an Academic subject and its acceptability at the college or university level is largely depend upon the manner in which we attempt to justify our practices and present a logical reason for what we do the overall development of the students community. We are born to live in happiness. Our body and mind are not being tortured by diseases. Illness of the body will affect mind also. The body is the temple of soul and to reach a harmony of the mind, body and spirit, the body must be physically fit (Charles A Bucher). The human body is built for physical movement. Through the ages, man has to be physically active in order to procure his daily food t succeed in the battle for survival. Yoga involves physical and mental activities. This is one of the ways in which physical development is exercised.

It trains a person to face competitions and challenges boldly. Human body is built for physical activity and movement. Yoga training activities big muscle activities. In many countries Yoga has been included as a physical activity. Yogasanas develop various Physical Fitness components like Abdominal Strength, Speed, Shoulder Strength, Explosive Power, Hand Grip Strength and Flexibility.

METHODOLOGY

The procedure adopted involves the sources and selection of subjects, selection of criterion variables, experimental design, reliability of data and tester competency, instrument reliability, orientation to the subjects, pilot study, training program schedule, test administration, collection of data and statistical analysis are explained.

SELECTION OF SUBJECTS

To achieve the purpose of the study forty five forestry graduates were selected randomly from the group of eighty. The subjects' age ranged from 18 years to 23 years. They were examined by a qualified medical practitioner and were found to be medically and physically fit to participate in the training programme. The subjects were fully residential and hence there was no difference in their feeding habits and life pattern and hence were considered as a homogeneous group.

EXPERIMENTAL DESIGN

The selected subjects (N=45) were divided into three groups equally and randomly. Of which experimental Group I underwent Yogasanas Training, Experimental Group II underwent Aerobics training and Group III acted as Control Group. All the two experimental groups were treated with their respective training for one and half hour per day for three days a week for period of sixteen weeks.

SELECTION OF CRITERION VARIABLES

Yoga and Aerobic practices awaken the mental and physical strength, Yogasanas, if done regularly and with proper preparations, they lead their full benefit to the fitness of the body and mind. Yoga helps to perform hard tasks confidently and successfully. It improves the functioning of veins and arteries. On the whole yoga can be a powerful enhancement in regular training exercises. The special feature of the Yogasanas is that what they do for the body, they do for the mind also in an effective way. Physical fitness can be excellently maintained by practicing in a selected yogic routine. The impurities which are formed due to wear and tear of the body are sent out properly through the outlets besides strengthening the organs which are responsible for our life, while building strength, power and flexibility. Aerobics is a good way to decrease percentage of body fat and to attain the other metabolic benefits of fitness.

"Aerobics" increases red blood cells count, which contains hemoglobin that is responsible for transporting oxygen in the blood, a decrease in resting blood pressure and a decrease in blood lipids. A regular aerobic exercise programme will cause a reduction in blood fats such as cholesterol and triglycerides. Aerobics builds stamina and increases the efficiency of bones, joints, muscles, blood circulation, respiratory, feeding, urine and nerve centers, organs and glands. Yogasanas and Aerobics were selected as independent variables. The investigator reviewed the available scientific literatures, journals, periodicals, magazine and research papers pertaining to the study and selected the following dependent variables to the investigation.

VAIRABLES AND CRITERION MEASURES

S. No	PHYSICAL FITNESS VAIRABLES	CRITERION MEASURES
1	Abdominal Strength	Bent Knee Sit Ups
2	Speed	50 Meters Dash
3	Shoulder strength	Pull Ups
4	Explosive Power	Vertical Jump
5	Hand Grip Strength	Hand Grip Dynamometer
6	Flexibility	Sit and Reach Test

S. No	PHYSIOLOGICAL VAIRABLES	COGNITIVE MEASURES
1	Breath Holding Time	Voluntary Forced Inhalation and Holding
2	Resting Heart Rate	Pulse Count
3	Diastolic Blood Pressure	Sphygmomanometer
4	Oxygen Consumption (VO ₂ Max)	Running on Tread mill and using Benedict Roth Spiro Meter

S. No	COGNITIVE VAIRABLES	COGNITIVE MEASURES
1	Concentration	Multiple Test
2	Memory	Observation Test
3	Mental Fatigue	Cancel Action Test

S. No	BIO-CHEMICAL VAIRABLES	CRITERION MEASURES
1	Blood Cholesterol	Measured at Hospital Laboratory
2	Low Density Lipoprotein Cholesterol	Measured at Hospital Laboratory
3	High Density Lipoprotein Cholesterol	Measured at Hospital Laboratory
4	Triglycerides	Measured at Hospital Laboratory
5	Total Protein	Measured at Hospital Laboratory

TOOLS USED FOR THE STUDY AND RELIABILITY OF INSTRUMENTS

Standard equipments were used for this study. Benedict Roth Spiro Meter, Tread Mill, Hand Grip Dynamometer, Stop Watch, Stethoscope and Electronic Sphygmomanometer were utilized from the Department of Farm machinery, College of Agricultural Engineering, Coimbatore. For Bio-Chemical variables Shakthi Nursing Home Clinical Laboratory was utilized. These instruments were procured from the standard scientific companies and were accepted as accurate enough from the purpose of this study.

CONCLUSIONS

The following conclusions have been made from the results of the statistical analyses. Yogasanas and Aerobic Trainings have highly effective in the improvement of abdominal strength, Speed, Shoulder strength, Explosive power, hand grip strength and Flexibility when compared to the control group.

Significant improvements were found in the Yogasanas and aerobic training groups when compared to the control group towards improving the selected criterion variables viz., Breath holding time, Resting heart rate, Diastolic blood pressure and Oxygen consumption (VO₂) Max.

The experimental groups of Yogasanas and Aerobic Training Groups have achieved significant improvement on concentration, Memory and Mental Fatigue as compared to control group.

Significant improvements were found between Yogasanas and Aerobic training groups when compared to the control group towards improving the selected criterion variables such as Blood cholesterol, Low density lipoprotein cholesterol. High density lipoprotein cholesterol, triglycerides and Total protein.

It is found that the yoga training group is found to be better than the aerobic training in improving the Breath holding time, Resting heart rate, Diastolic blood pressure, Oxygen consumption (VO₂ Max), Concentration and Memory and reducing Mental fatigue.

Efficacy Of Nostril Dominance Yogic Practices On Cardio-Respiratory Parameters Of Badminton Players

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Abstract

The purpose of the study was to determine the efficacy of Nostril Dominance yogic practices on different cardio-respiratory parameters of Badminton Players. 21 male badminton players of age ranging between 17-22 years were randomly selected as subjects from Guru Gobind Singh Sports College, Lucknow and were grouped into three experimental groups (A, B & C) i.e. Left nostril dominance group, right nostril dominance group and uni-nostril dominance group respectively and each group consisted of 7 subjects which were measured on peak flow rate, vital capacity, cardio respiratory, heart rate and respiratory rate. The three experimental groups participated in a 3 week, 4 days a week for 50 minutes of duration in their respective yogic training program. Paired T test was used to analyze the collected data on selected parameters at 0.05 level of significance. The obtained t- value of left nostril dominance experimental group, right nostril experimental group and uni-nostril dominance experimental group on Peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate are 3.56, 3.21, 3.22; 2.26, 7.1, 2.8; 2.27, 2.29, 5.77; 3.93, 6.04, 4.3; 4.56, 6.9, 3.7 respectively which are greater than tab value of 1.94 required to be significant. After comparing mean difference it was evident that uni-nostril dominance has effected significantly better than right nostril dominance and left nostril dominance yogic training on all cardio-respiratory parameters. Hence on the basis of these findings, the hypothesis made earlier that there will be significant effect of nostril dominance yogic training on selected cardio respiratory variables of badminton players is accepted for the variables.

Keywords: Nostril Dominance, Yogic Practices, Cardio- Respiratory Parameters.

Introduction

Life absolutely depends upon the act of breathing. Breathing may be considered as the most important of all the functions of the body, for indeed, all the other functions depend upon it. We breathe day and night even during sleep. Breathing changes after every hour (approx.) from right nostril to left nostril and vice versa. When the flow of breathing is more through the right nostril, we call it right nostril dominated, whereas if the flow of breathing is more through the left nostril we call it left nostril dominated. In recent years there has been a growing interest among scientists regarding the significance of two nostrils. They have also recognized the importance of uni-nostril breathing patterns for physiological function. This nostril dominance is due to contraction and relaxation of mucus structure of the nasal pharynx junction. The left and right nostril dominant cause is not yet established but it results due to nervous excitation. Nostril dominance is kind of breathing exercise that resembles Anlom Vilom Pranayama and Surya & Chandra Bhedna Pranayama. Considering this fact and reading various literature and articles I felt that nostril dominance yogic practices can have an effect on different cardio-respiratory parameters of players.

Significance of Study

The study would help the teachers of physical education, coaches and yoga experts by way of pointing out the effectiveness of nostril dominance on cardio-respiratory parameters.

The study would provide scientific base to improve ancient Indian culture and discipline of yoga which our ancestors advised for general well being and healthy living.

Teachers of Physical Education and coaches of various sports disciplines can adopt the most appropriate program of yogic training

Research Hypothesis

Based on all the understanding it was hypothesized that-

All the three forms of nostril dominant experimental program would significantly effect all the cardio- respiratory parameters.

The effect on respiratory parameters would be significantly different according to the types of nostril dominance program.

Limitation & Delimitation

The study was limited to the following cardio-respiratory parameters-

Peak flow rate.

Vital capacity

Cardio respiratory endurance

Heart rate

Respiration rate

The study was further delimited to investigate the effect of nostril dominance on the following group of subjects-

Left nostril dominance

Right nostril dominance

Both nostril dominance

Research Methodology:

For the present experimental study 21 male badminton players age ranging between 17-22 years were randomly selected as subjects from Guru Gobind Singh Sports College, Lucknow and grouped into three experimental groups (A, B & C) i.e. Left nostril dominance group, right nostril dominance group and uni-nostril dominance group respectively and each group consisted of 7 subjects. The variables selected were peak flow rate, vital capacity, cardio respiratory endurance, heart rate and respiratory rate. The three experimental groups participated in a 3 week training program with session of 50 minutes duration on 4 days a week. The quantitative measurement of each subject was taken with the help of standard equipment, before and after the three weeks of training. Paired T test was used to analyze the collected data on selected cardio-respiratory variables at 0.05 level of significance.

Data Analysis & Results

Table 1

Comparison of Pre and Post Test Mean Values on Cardio-Respiratory Variables of Left Nostril Dominance Experimental Group

Variables Compared	Pre Mean	Post Mean	M.D	S.D	T Ratio
Peak Flow Rate	520	523.58	3.58	2.55	3.56*
Vital Capacity	2.35	2.62	0.27	0.31	2.26*
Cardio-Respiratory Endurance	43.62	44.90	1.28	1.45	2.27*
Heart Rate	51.71	50.71	1	0.66	3.93*
Respiratory Rate	13.42	12.85	0.57	0.57	4.56*

Significance $t_{0.05(6)} = 1.94$

Table 1 clearly reveals that Left Nostril Dominance yogic breathing training has significantly effected cardio-respiratory parameters namely peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate. Since the T ratio value obtained were 3.56, 2.26, 2.27, 3.93 & 4.56 respectively, which are greater than tab value of 1.94 required to be significant. This implies that Left Nostril Dominance Training had brought significant difference on the cardio-respiratory variables.

Table 2

Comparison of Pre and Post Test Mean Values on Cardio-Respiratory Variables of Right Nostril Dominance Experimental Group

Variables Compared	Pre Mean	Post Mean	M.D	S.D	T Ratio
Peak Flow Rate	520	524.28	4.28	3.46	3.21*
Vital Capacity	2.34	2.81	0.47	0.17	7.1*
Cardio-Respiratory Endurance	42.66	44.26	1.6	1.8	2.29*
Heart Rate	51.28	50.14	1.14	.49	6.04*
Respiratory Rate	13.42	12.57	0.85	0.32	6.9*

Significance $t_{0.05(6)} = 1.94$

Table 2 reveals that Right Nostril Dominance yogic breathing training has significantly effected cardio-respiratory parameters namely peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate. Since the T ratio value obtained were 3.21, 7.1, 2.29, 6.04 & 6.9 respectively, which are greater than tab value of 1.94 required to be significant. This implies that Right Nostril Dominance Training had brought significant difference on the cardio-respiratory variables.

Table 3

Comparison of Pre and Post Test Mean Values on Cardio-Respiratory Variables of Uni- Nostril Dominance Experimental Group

Variables Compared	Pre Mean	Post Mean	M.D	S.D	T Ratio
Peak Flow Rate	521.42	525.71	4.29	3.45	3.22*
Vital Capacity	1.92	2.58	0.66	0.6	2.8*
Cardio-Respiratory Endurance	42.98	44.90	1.92	0.86	5.77*
Heart Rate	51.57	45.85	5.72	0.76	4.3*
Respiratory Rate	13	12.14	0.86	0.5	3.7*

Significance $t_{0.05(6)} = 1.94$

Table 3 clearly reveals that Uni-Nostril Dominance yogic breathing training has significantly effected cardio-respiratory parameters namely peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate. Since the T ratio value obtained were 3.22, 2.8, 5.77, 4.3 & 3.7 respectively, which are greater than tab value of 1.94 required to be significant. This implies that Both Nostril Dominance Training had brought significant difference on the cardio-respiratory variables.

Table 4

Descriptive statistics on Cardio- Respiratory Parameters of Left Nostril Dominance, Right Nostril Dominance and Uni-Nostril Dominance

Variables	Group	Pre Mean	Post Mean	M.D
Peak Flow Rate	BND	521.42	525.71	4.29
	RND	520	524.28	4.28
	LND	520	523.58	3.58
Vital Capacity	BND	1.92	2.58	0.66
	RND	2.34	2.81	0.47
	LND	2.35	2.61	0.27
Cardio-Respiratory Endurance	BND	42.98	44.90	1.92
	RND	42.66	44.26	1.60
	LND	43.62	44.90	1.28
Heart Rate	BND	51.57	45.85	5.72
	RND	51.28	50.14	1.14
	LND	51.71	50.71	1
Respiratory Rate	BND	13	12.14	0.86
	RND	13.42	12.57	0.85
	LND	13.42	12.85	0.57

An observation of Table 4, from mean difference comparison it was evident that, on all the cardio-respiratory parameters that are peak flow rate, vital capacity, heart rate, cardio-respiratory endurance and respiratory rate; uni-nostril dominance has effected significantly better than right

nostril dominance and left nostril dominance yogic training respectively. In terms of effect as expressed by mean difference shows order or pattern as Uni-Nostril Dominance > Right Nostril Dominance > Left Nostril Dominance.

Discussion and Findings

Nostril dominance breathing pattern is a natural phenomenon and changes in dominance pattern are because of hemispheric activity of central nervous system and the various parts involved throughout a day. The finding of the study shows that the three forms of nostril dominance breathing on yogic training significantly improved cardio-respiratory variables and it showed that uni-nostril dominance effect is most. In the case of left nostril dominance and right nostril dominance, the air passage through nasal cavity through either right or left nostril by nasal mucus and nasal pharynx congestion reduces the effect. This happens due to activation of opposite sensory nerves through selected yogic asana. As a result the air passage through nasal flow is restricted.

In comparison to this during uni-nostril dominance exercise the nasal passage completely widens off which helps in the air flow through nasal cavity. As a result every organ that is involved in the cardio-respiratory system is exercised to the maximum level. Thus, this might be the reason that both nostril yogic training effected most.

Discussion of Hypothesis

On the basis of finding of the study the hypothesis made earlier that there will be significant effect of nostril dominance yogic training on selected cardio-respiratory variables is accepted for the variables peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate.

Conclusions

On the basis of findings of this research experiment and thereby understanding it is concluded that:

Every form of nostril dominance yogic exercise is highly effective for improving all the cardio-respiratory parameters.

Uni-Nostril Dominance yogic exercises is the most effective and best form of yogic training to improve various cardio-respiratory parameters.

Combination of nostril dominance training program should include breathing exercises as well as yogic asana.

It is possible to bring in effect in cardio-respiratory variables through nostril dominance yogic training in minimum of three weeks training.

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Relationship Of Selected Physical And Anthropometrical Variables With The Game Performance Of College Men Volleyball Players

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ABSTRACT

This study examined the relationship between game performance and selected physical fitness and anthropometrical variables of volleyball players who have represented intercollegiate level, their age ranged from 18-21 years under the V.T.U. jurisdiction. The subjects were taken from Bangalore district studying in Bachelor Degree in Engineering coming under Bangalore Regional jurisdiction only. The parameters of physical fitness like Abdominal Strength, Muscular Power, Flexibility Speed, Agility and Muscular Endurance were assessed. The anthropometric variables like height, weight, arm length, leg length and arm span were assessed. The four point rating scale was employed to assess the game performances of the volleyball players during game situations. Data in the four skills namely serve, pass (service reception), attack and block were rated on a scale from zero to three. The rating of the players was done by three experienced and well known judges as per the rating scale during match situations. The statistical tool used was Pearson product moment correlation. There exists a positive correlation between game performance with abdominal strength ($r=0.467$; $P<0.01$); muscular power ($r=0.343$; $P<0.05$), flexibility ($r=0.368$; $P<0.05$), agility ($r=0.498$; $P<0.01$) and muscular endurance ($r=0.500$; $P<0.01$), in addition it is also showed that the game performance is negatively correlated with speed ($r=-0.380$; $P<0.05$). It is clearly exemplified that there exists a positive correlation between game performance with height ($r=0.399$; $P<0.05$), arm length ($r=0.463$; $P<0.01$), arm span ($r=0.547$; $P<0.01$), leg length ($r=0.548$; $P<0.01$), arm girth ($r=0.559$; $P<0.01$), thigh girth ($r=0.418$; $P<0.01$) and calf girth ($r=0.498$; $P<0.01$), besides the results also reveal that there is a negative insignificant correlation between game performance and weight. It was concluded that there is a need to improve the physical fitness parameters in relation to anthropometric measurements so as to enhance the game performance of the volleyball players.

Keywords : Physical Anthropometrical, Game performance.

INTRODUCTION : The players are creating and breaking new records in today's competitive sports. Traditionally the motto of Olympic festival is faster, higher and stronger is still alive in the field of physical education and sports. The aim of games and sports is fast suited with every field. The level of physical fitness is increasing day to day because of development of science and technology. Volleyball is a game played indoor or outdoor by teams whose members seek to score points in the course of hitting a ball back and forth across a net. It is a popular game in the matter of techniques, blocking as well as jumps and smashes play a crucial part in volleyball. Successful game of volleyball needs ability of the players to generate good speed, agility, flexibility and incredible power during the play of game. Skills like serving, passing, attack and block are of utmost importance for a player at any level of play. Not merely skills but also physical

and anthropometric measurements of a player will contribute to the success of the player as well as of the team. The performance of athletes, players, sportsmen at various national and international competitions has been poor and this is of great concern especially to the coaches, physical educationists, sports scientists and researchers. Optimal performance thus requires a combination of technical and tactical abilities as well as a high degree of physical fitness. Efforts, to improve the standard of our sportsmen, have achieved an insignificant success in this respect. The performance of any player will depend upon his physical fitness and anthropometric characteristics.

Physical activity enhances mental development of person (Cowell and France, 1963). In physical education and sports, especially, in developing physical fitness there is a large collection of activities for experiencing success (Kane, 1975). Many studies conducted outside India have advised for physical fitness has positive effect on sport performance capacity (Harre, 1977 and Hollman, 1981). Anthropometric characteristics play an important role in determining the success of an athlete. Quite naturally, the interest in anthropometric characteristics and body composition of sportspersons from different competitive sports has increased tremendously over the last decades. It has been well established that specific physical fitness or anthropometric measurements indicate whether the player would be suitable for the competition at the highest level in a specific sport (Slater et al., 2005). These physical and anthropometric parameters are the responsive indicators of physical growth and nutritional status of the sportspersons for their maximal performances. These indicators of viewpoint sports performance depend largely on heredity, correlated with age, height, socio-economic status, nutritional status and exercise practice. Proper evaluation of these parameters plans the quantification of physical and anthropometric measurements of players which can be vital in relating body structure and sports performance. Several studies have examined the relationships between physical fitness and anthropometric measurements of volleyball players (Gladden & Colacino, 1978; Fry et al., 1991). The findings of these studies have shown that certain anthropometric measurements are advantageous to the volleyball players, including greater height and greater vertical jump distance (Gladden & Colacino, 1978)

AIMS AND OBJECTIVES OF THE STUDY :

The aim of the present study is to examine the relationship of physical fitness and anthropometric measurements with game performance of volleyball players.

MATERIAL AND METHODS :

Sample: The present study was carried out on forty male volleyball players who have represented intercollegiate level, their age ranged from 18-21 years under the V.T.U. jurisdiction. The subjects were taken from Bangalore district studying Bachelor Degree in Engineering stream coming under Bangalore Regional jurisdiction only

Variables selected: The parameters of physical fitness like Abdominal Strength using Sit Ups, Muscular Power using vertical jump, Flexibility using Sit and Reach Test, Agility using quadrant Jump, Speed using 50 Meter Dash and Muscular Endurance using Push Ups test were assessed. The anthropometric variables like height, weight, arm length, leg length and arm span were assessed. The four point rating scale was employed to assess the game performances of the volleyball players during game situations. Data in the four skills namely serve, pass (service reception), attack and block were rated on a scale from zero to three. The rating of the players was done by three experienced and well known judges as per the rating scale during match situations.

Statistical Analysis: Pearson's Coefficient of Correlation was applied to establish the relationship among the variables measured. Data were analyzed using SPSS (Statistical Package for Social Science) version 11.5 at 0.05 and 0.01 level of probability was used to indicate statistical significance.

ANALYSIS AND INTERPRETATION OF DATA:

The results pertaining to the significant relationship between the selected physical fitness and game performance of volleyball players by using Pearson's Coefficient of Correlation are presented in the following tables.

Table-1: Table showing relationship between selected physical fitness variables and game performance of volleyball players.

Game Performance and	Physical Fitness	N	Df (N-2)	'r' value	Level of significance
Game Performance with	Abdominal Strength	40	38	0.467	**
	Muscular Power	40	38	0.343	*
	Flexibility	40	38	0.368	*
	Agility	40	38	0.498	**
	Speed	40	38	-0.380	*
	Muscular Endurance	40	38	0.500	**

* Significant at 0.05 level ; ** Significant at 0.01 level.

The above table shows the analysis of the game performance with the selected physical fitness variables is represented. From the above table it is clearly illustrated that there exists a positive correlation between game performance with abdominal strength ('r'=0.467; P<0.01); muscular power('r'=0.343; P<0.05), flexibility ('r'=0.368; P<0.05), agility ('r'=0.498; P<0.01)and muscular endurance ('r'=0.500; P<0.01), in addition it is also showed that the game performance is negatively correlated with speed ('r'= -0.380; P<0.05).

Table-2

Table showing relationship between selected anthropometric measurements and game performance of volleyball players.

Game Performance and Anthropometric Measurements		N	Df (N-2)	'r' value	Level of significance
Game Performance with	Height	40	38	0.399	*
	Weight	40	38	-0.147	NS
	Arm Length	40	38	0.463	**
	Arm Span	40	38	0.547	**
	Leg Length	40	38	0.548	**
	Arm Girth	40	38	0.559	**
	Thigh Girth	40	38	0.418	**
	Calf Girth	40	38	0.498	**

* Significant at 0.05 level ; ** Significant at 0.01 level; NS = Not Significant

The above table illustrated the analysis of the game performance with the selected anthropometric measurements is represented. From the above table it is clearly exemplified that there exists a positive correlation between game performance with height ($r=0.399$; $P<0.05$), arm length ($r=0.463$; $P<0.01$), arm span ($r=0.547$; $P<0.01$), leg length ($r=0.548$; $P<0.01$), arm girth ($r=0.559$; $P<0.01$), thigh girth ($r=0.418$; $P<0.01$) and calf girth ($r=0.498$; $P<0.01$), besides the results also reveal that there is a negative insignificant correlation between game performance and weight.

DISCUSSION OF RESULTS:

Every game needs the specific skills which are essential for achievement in the competitions. The execution of the skill can be aesthetic and attractive if the individual possesses the requisite fitness components. The fitness variables required differ as per the demands of the skills and the game. Volleyball is an exiting and fast modern game involving varied fitness components. Volleyball is a game played indoor or outdoor by teams whose members seek to score points in the course of hitting a ball back and forth across a net. It is a popular game in the matter of techniques, blocking as well as jumps and smashes play a crucial part in volleyball.

The results of the study showed that there was a significant correlation between the selected physical fitness and anthropometric measurements with the game performance of volleyball players except weight.

Some of the studies in this area have concluded that training develops physical fitness and skills in the game found that fitness factors and skill tests are interrelated to each other. The volleyball players require well developed speed, agility, muscular power and muscular endurance.

Muscular strength and power is very important for vertical jump and speed of movement around the court. Core stability and abdominal function is important in agility and balance and in the controlling of movement and execution of skills. Flexibility is defined as the extent or full range of movement in any joint without undue strain to the articulation and muscles attachments. Greater flexibility is mechanically advantageous as it saves energy and reduces risk of injuries. Agility is defined as the ability of an individual to rapidly change the body position and direction in a smooth, quick and precise manner. Agility is advantageous as it improves serving, passing, attacking, and blocking. Muscular endurance holds great significance because of its dependence on functional capacity and integration of the systems required for oxygen supply, transport, delivery and utilization. Having a high level will reduce the effect of fatigue during long periods of play.

In the present study the height, arm length, arm span, leg length, arm girth, thigh girth and calf girth have significant relationship with game performance. Though volleyball players have better height, arm length, arm span, leg length, arm girth, thigh girth and calf girth, these measurements might be due to less fat on the arm in the players. In volleyball, teams compete by manicores handling the ball above the head, height is considered to be the most important physical attribute. The volleyball players have greater arm and leg length, arm span, arm girth, thigh girth and calf girth. This might be due to more fat on the arm in the players. In the present study, the mean height of the players was greater. Greater body weight among volleyball players might be disadvantageous for them in attaining a good jumping height as they have to lift a greater weight (Bandyopadhyay, 2007).

It was recently shown that volleyball players showing skill execution was an important as physical and anthropometric characteristics for predicting success in volleyball players (Gabbett & Georgieff, 2007). Further, confirmed in the earlier studies that fitness factors and skill tests are interrelated to each other. Subramanian (1991) found that training resulted significant improvement in general physical fitness and basketball skills a known fact that every game needs the specific skill.

CONCLUSION

On the basis of the result as shown in the above tables and discussion of results, the following conclusion may be drawn:

1. Game performance of volleyball player can be performed in the best possible manner if the players have abdominal strength muscular power, flexibility, agility, and muscular endurance
2. Game performance of volleyball player can be performed in the superlative potential manner if the players have height, arm length, arm span, leg length, arm girth, thigh girth and calf girth.
3. Speed has negative influence on game performance.
4. Game performance may not be influenced by weight

From the study it was concluded that there is a need to improve the physical fitness parameters and anthropometric measurements so as to enhance the game performance of the volleyball players. The coaches can develop specific training programmes for volleyball players. In the training programme, emphasis must be laid on the improvement of power, flexibility, speed, agility, endurance and reduce the body weight.

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Pranayama and sports

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Introduction:

Pranayama is generally defined as breath control although this interpretation may seem in view of the particles involved, it does not convey the full meaning of them. The word pranayama is comprised of two roots: prana and ayama. Prana means vital energy is life force it is the force which exists in all things, whether animate or inanimate. Although closely related to the air we breathe it is more subtle than oxygen. Therefore pranayama should not be considered as mere breathing exercises aimed at introducing extra oxygen into the lungs pranayama utilized breathing to influence the flow of prana in the nadis is energy channels of pranayama energy body the word yama means control and is used to denote various roles or codes of conduct. However this is not the word which is joined to prana to form pranayama: the correct word is ayama which has for more implications than word yama. ayama is defined as extension or expansion thus, the word pranayama means extension or expansion of prana .the techniques' of pranayama provide the methods where by the life force can be activated and regulated in order to go beyond once normal boundaries limitations and attain a higher state of vibratory energy.

Four aspects of pranayama

In the pranayama practices there are four aspects of breathing which are utilized these are

1. Pooraka or inhalation
2. Rechaka or exhalation
3. Antarkumbhaka or internal breath retention
4. Bahirkumbhaka or external breath retention

The different practices of pranayama involve various techniques which utilize these four aspects of breathing .there is another mode of pranayama which is called kevalakumbhaka or spontaneous breath retention. this is an

Advanced stage of pranayama which occurs during high state of meditation .during this stage, the lungs stop their activity at the respiration ceases.

Discussion:

At this time, the veil which prevents one from seeing subtle aspect of existence is lifted and a higher vision of reality is attained.

The pranic body

According to yogic physiology, the human frame work is comprised of five bodies are sheaths, which account for the different aspects for the dimension of human existence. These five sheaths are known as

1. Annamaya kasha, the food or material body.
2. Manomaya kasha, the mental body
3. Pranayama kasha, the biphasic or vital energy body
4. Vijnanamaya kasha, the psychic or higher mental body.
5. Anandamaya kasha, the transcendental or bliss body.

Although this five sheaths function together to form an integral whole, the practices of the pranayama work mainly with pranayama kosha. The pranayama kosha is made up of five major pranas which are collectively known as pancha. Are five pranas: prana, apana, samana, udana and

vyana. Prana in this context does not refer to cosmic prana, but rather to just one part of pranamaya kosha, the governing the area between the larynx and top of the diaphragm it is associated with organs of respirations and speech, and the gullet together with the muscle and nerves that activate them. It is the force by which the breath is drawn inside. Apana is located below the naval region and provides the energy for the large intestine, kidneys, Anus and genitals. It is concerned with the expulsion of waste from the body. Samana is located between the heart and navel. It activates and controls the digestive system; the liver, intestines, pancreas and stomach, and their secretion. Samana also activates the heart and circulatory system and is responsible for the assimilation and distribution of nutrients. Udana controls the area of the body above the neck, activating all the sensory receptors such as the eyes, nose, and ears. Thought and consciousness of the outside world would be impossible without it. Udana also harmonizes and activates the limbs and all their associated muscles, ligaments, nerves and joints, as well as being responsible for the erect

Posture of the body. Vyana pervades the whole body regulating controlling and all movement and coordinating the other pranas it acts as the reserve force for the other pranas.

Conclusions:

Breathe, health and Pranayama

The breath is the most vital process of body. It influences the activities of each and every cell and most importantly, is intimately linked with the performance of the brain. Human beings breathe about 15 times per minute and 21,600 times per day. Respiration fuels the burning of oxygen and glucose, producing energy to power every muscular contraction, glandular secretion and mental process. The breath is intimately linked to all aspects of human experience.

Most people breathe incorrectly; using only a small part of their lung capacity the breathing is then generally shallow, depriving the body of oxygen and prana essential to its good health. The first five practices given in this section are preparatory techniques which introduce correct breathing habits. In addition, they help focus the awareness on the breathing process, which is otherwise normally ignored. Practitioners develop sensitivity to the respiratory process, which is otherwise normally ignored of the pulmonary cavity, enhancing their vital capacity and preparing them for pranayama.

Rhythmic, deep and slow respiration stimulates and is stimulated calm, content states of mind. Irregular breathing disrupts the rhythms of the brain and leads to physical, emotional and mental blocks. These in turn, lead to inner conflict, imbalance personality, disorder lifestyle and disease. Pranayama establishes regular breathing patterns, breaking this negative cycle and reversing the process it does so by taking control of the breath and reestablishing the natural relaxed rhythm of the body and mind.

Although breathing is mainly an unconscious process, conscious control of it may be taken at any time. Consequently it forms a bridge between the conscious and unconscious area of the mind through the practice of pranayama, the energy tapped in neurotic, unconscious mental patterns may be released for us in more creative and joy full activity.

The Role of Technology in Sports and Physical Education

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ABSTRACT

In the ever changing world technology has got its own influences a result life of the people has become fast and complex in each and every aspect. Now-a-days, in physical education also technology has its own vital role to play. It has raised the standard of physical education and sports to a level, far, far away from the level it was before. The technological advancement in physical education and sports helped the profession attain the goals in an easier and simpler way. Technology has stretched out its areas such as teaching, coaching, performance, and analysis, manufacture of sports material, sports medicine, sport science, sport teaching, etc, through which the profession has grown to a great height. Many researchers have proved that teaching and learning process is positively affected by technology. In physical education and sports we notice advancement in each and every aspect. So far as sport technology is concerned, except to some extent it can't serve its best without technology in physical education and sports but it is playing vital role for coaches, trainers, officials, physical education Director, Physical Education Teachers, students and athletes.

Introduction

The world of sport is continually changing over the years, and the use of technology is just one of those areas that have made an impact on many sports in the modern day. One criticism of the use of technology is that it can slow down the speed of the game. Practically everybody has played sports video games on a computer. It's fun to pick a team and see how well you can play against a "virtual" rival. However, the uses for computers in sports go far beyond video games.

Analyzing Movement

If you ask a softball pitcher how he/she throws a fastball, he/she may not be able to tell you. She may say it's just "instinct." It's something that comes naturally. The fact is that there are ways to help pitchers become better pitchers and batters become better hitters. And computers are important in making this happen. Baseball players from the major leagues down to city and school teams can now have their batting and pitching analyzed.

First, the player's movements are videotaped. Then, these videotaped images are transferred into a computer. Special application software analyzes the images. It measures the exact angle at which the player is holding his or her arms and legs. The speed and efficiency of each body movement is measured. This process is called motion analysis.

These computer applications also can be used to compare the movements of two different layers. These comparisons, for example, can help explain why different players tend to hit the ball in different directions.

Keeping Stats

Everybody knows how important statistics (or stats) are in sports. Without computers, it would be very difficult to keep these statistics up-to-date. Not only are there team statistics, but there are also statistics on each individual player. Spreadsheet applications are often used to keep track of statistics. Spreadsheet applications are computer programs that can store and manipulate numbers.

Jumbo Sized

Going to a baseball park is almost like going to the circus. There are hotdogs, popcorn, and a scoreboard complete with a gigantic TV-like screen. New ballparks, such as the Seattle Mariners' Safeco Field, have very complex scoreboards. The Mariners' board is 56 feet tall and 190 feet wide. It includes a giant screen to add to the excitement. The best-known type of giant screen is the Sony Jumbotron. The pictures on these screens move from the players to the crowd.. In 2000, the University of Tennessee's athletics and physics departments joined together to create a group of 60-second videos. These videos were shown on the school's Jumbotron during home games. The purpose of the videos was to teach fans about the science of football. This was a fun way to join together sports and education.

On the Web

The Professional college and even some high school sports teams have their own Web sites. Just go to their Web site it provides opportunity for the viewers to know the following

The information available on sports teams' Web sites is amazing. Some of it includes:

- **Schedules.** Game dates and locations are available.
- **Statistics.** Up-to-the-minute information on teams and individual players is ready whenever you want it.
- **Team News.** Web sites contain coach and player interviews, information on injuries, and so forth.
- **Ticket Purchasing.** Rather than stand in line, you can purchase your tickets at home. You can even look at a diagram of the stadium to see exactly where you will be seated.
- **Online Shopping.** You can buy baseball cards, caps, jerseys, and many other items.

Computers and the Olympics

Athletes who depend on speed to win will stop at nothing to reduce their times. Some Olympic swimmers wear full-body "skin suits" so they can glide through the water more easily. This **simulation software** attempts to copy the way water flows around parts of the swimmer's body, such as the arms and hands. The swimmer's goal is to move through the water as smoothly as possible. Water **turbulence** can slow a swimmer down. At the 2002 Winter Games in Salt Lake City, Utah, tiny computer chips were used to track skiers. A chip was strapped to each skier's ankle. Electronic devices were buried in the snow along the track. When a skier passed over one of the devices, his or his chip sent information to the device. This information included the skier's location, speed, and number. This information was sent to a central computer. Judges and other Olympic officials could then look at it.

For Research

The research scholar, physical education experts use the technology for there research work, there are number of software are available to analysis the Data's (SPSS, EXCEL, ONLINE DATA ANALYSIERS) etc. it is very difficult for research scholar to a complete his work without the technology that is computer, internet, printer etc., The research scholar surf the internet to get full knowledge about his area of research and also helps in analysis of body posture, BMI, Body composition & body fat.

Use to gain knowledge of all the games and sports in world.

The computer and internet is part of games and sports because the internet gives u full information about rules of the game, players profile, origin and history of sports, to know new rules and laws of the games, to make result neatly, record the score and data's of games, to learns skill, to teach skill, to correct the skill, to know athlete ability, for talent identification of athletes thus the technology is far much useful the all the individual to those who use it properly. The Technology which has been used to coaching **training and correction of skills.**

Technology in Football

Why Soccer Goal Line Technology?

There is a need for goal line technology in soccer, particularly as there are numerous examples where the TV reply has been able to show wrong decisions by the referee, where a ball has or has not passed over the goal line, and the goal was given or not given. Technology in cricket, tennis and American Football has been successfully implemented, and in general the fans have welcomed it.

Requirements

There are several options available for goal line technology. The International Football Association Board (IFAB) want to get it right before they implement a system. They have laid down the following four criteria that they want to see in a goal-line system:

The technology should only apply to goal-line decisions.

The system must be 100 per cent accurate.

The signal sent to the referee must be instantaneous.

The signal is only communicated to the match officials.

Possible Options

Smart Ball

A promising prospect has been a "smartball" loaded with an computer chip, jointly developed by German companies Cairos Technologies and the Fraunhofer Institute for Integrated Circuits, an engineering research and software development company, along with the Adidas athletic clothing and shoe company. The companies' technology uses a network of receivers around the field designed to track the ball's precise position in real time - including exactly when it has fully passed the goal line. That information would be relayed in less than a second to a watch-like device worn by the referee.

Hawkeye

The system by the UK Company Hawk-Eye has had very successful trials and is the front runner out of the systems in development. Hawke-Eye has already been used to make calls in tennis, and used as a TV tool in cricket. The Football version has been extensively trailed at Reading and has performed very well in the test environment. The Hawke Eye system uses three cameras focused on each goal-line, and each taking footage at 600 frames a second.

Hawk-Eye is able to give a definitive decision on whether the ball has fully crossed the line, and relay this information in the form of an audible beep to the central referee within half a second. As the Premier League referees use headsets, the signal is easily sent to them. In other leagues, other methods such as through a watch can be used.

The system is on target to be in place by the end of 2007. For anyone who has seen their team robbed of a win because no such system is in place, it will not be soon enough.

Technology in Tennis

Hawk-Eye line-calling system

Hawk-eye is the name of a line-calling system which traces a ball's trajectory and sends it to a virtual-reality machine.

Method

Hawk-Eye uses six or more computer-linked television cameras situated around the court. The computer reads in the video in real time, and tracks the path of the tennis ball on each camera. These six separate views are then combined together to produce an accurate 3D representation of the path of the ball.

Technology in Cricket

Over the years cricket has incorporated into the game a few of the technological advances available. There have been some rejections of technology, such as the use of aluminum cricket bats, but generally the ICC has been rightly cautious about making changes to the game that will impact the players and spectators. Here are discussions about a few of the technological innovations that are in cricket or are being discussed about being included.

Third Umpire

In international cricket, the third umpire has been used to supplement the role of the two umpires on the ground. The third umpire is equally qualified, and sits off the ground with access to TV replays of certain situations (such as disputed catches and boundaries) to advise the central umpires. The umpires out on the field are in communication via wireless technology with the other umpire. The third umpire is also asked to adjudicate on run out decisions, which he makes without consultation with the two central umpires.

Hot Spot

Hot Spot is an imaging system used in to determine whether the ball has struck the batsman, bat or pad. Hot Spot requires two infrared cameras on opposite sides of the ground above the field of play that are continuously recording an image. Any suspected snick or bat/pad event can be verified by examining the infrared image, which usually shows a bright spot where contact friction from the ball has elevated the local temperature. Where referrals to an off-

field third umpire are permitted, the technology is used to enhance the on-field umpire's decision-making accuracy. Where referrals are not permitted, the technology is used primarily as an analysis aid for televised coverage

Use

Its principal application in cricket is in deciding whether the ball has struck the batsman's bat or pad — this determination being critical in determining if a batsman is dismissed or not on appeal for LBW or caught. Hot-spot imagery is also used to show which part of the cricket bat hit the ball, as ideally the batsmen try to "middle" the ball i.e. hit it where the sweet spot lies. Hot spot camera provides some valuable information while analyzing the strokes played by a batsman.

Cricket Referrals

Cricket has joined some other sports and has played around with an umpire referral system. It was first trialed in 2008 (in a Test series between Sri Lanka and India). Unlike in tennis where the challenge and referral decision is clear cut using hawk-eye technology, the cricket referral is adjudicated by the third umpire, and is open to further errors. The actual way it works may change and develop, but when it was first brought in this is how it worked.

TV Technology

Hawkeye - A computer system first used in 2001 for showing the path of a cricket ball. It is a commonly used and indispensable tool for cricket commentators around the world to confirm the umpires decisions.

Snick-o-Meter - a very sensitive microphone located in one of the stumps, which can pick up the sound when the ball nicks the bat. This technology is only used to give television audiences more information and to show if the ball did or did not actually hit the bat. Unfortunately the umpires does not get the benefit of seeing 'snicko'.

New Technology

Cricket is a sport steeped in tradition. Making changes to the rules that have been in place for a long time is not taken lightly. In addition to uses of technology that are discussed above, here are a couple more ideas

Give the umpires some feedback about whether a front foot no ball has been made. They could have some technology which gives the umpire a beeping sound if the bowler crosses the popping crease, like in tennis for let or fault calls. This will mean that the umpire does not need to be distracted and looking down as the bowler delivers the ball, and can focus on what the batsman does.

This has been trailed to some degree, but every batsman should be allowed to challenge a decision if he feels that he's got a wrong one, which can then be referred to the third umpire. Viewers at home get much more information than the umpire, which only makes the umpire look incompetent. Why not change the way things are done so that the right decision is made all the time.

Hawk-Eye System in Cricket

Hawk-eye is the name of a computer system which traces a ball's trajectory, with a claimed accuracy of 5 mm, and sends it to a virtual-reality machine.

Method

Hawk-Eye uses six or more computer-linked television cameras situated around the cricket field of play. The computer reads in the video in real time, and tracks the path of the cricket ball on each camera. These six separate views are then combined together to produce an accurate 3D representation of the path of the ball.

Conclusion:

An attempt was made in this paper to present a how the technology is helping to physical education and sports. The technological advancement in physical education and sports helped the profession attain the goals in an easier and simpler way. Technology has stretched out its areas such as teaching, coaching, performance, and analysis, manufacture of sports material, sports medicine, sport science, sort teaching, etc, through which the profession has grown to a great height.

Whenever a profession needs to carry out certain function-to review the quality of motion, for performance analysis, for assessment etc-technology has helped overcome those difficulties.

Thus this paper wills the Research scholar , Physical Education resources persons, physical education Directors, Physical education Teachers, stutters and athletes.

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School children are aerobically fit

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Introduction:One cannot expect the human body to function optimally and to remain healthy for extended periods if body is abused or not used as intended. No doubt, modern technology has lessened the physical demands of everyday activities. Living organisms generally develop an adaptive increase in functional capacity in response to increased use and undergo a decrease in functional capacity when they are not used. this may be one of the prime reason leading today's society with the high risk of developing hypo-kinetic diseases such as coronary heart disease, hypertension, hypercholesterolemia, cancer, obesity and musculoskeletal disorders: thus leading to premature deaths. it is well established fact that regular physical activity is the best defense against many diseases and disorders. The importance of regular physical activity is in preventing disease and premature death and in maintaining a high quality of life.

Methodology:

In order to understand the level of habitual physical activities and training status among school children, researcher carried out an evaluation aerobic fitness. Study was conducted on 1200 school children of Karnataka state in the age group of 12 to 16 years. As an objective measurer of aerobic fitness, maximal aerobic capacity (vo2 max) was found out by using most popular multistage shuttle run test protocol. Both absolute and relative values of maximal aerobic capacity were calculated and compared cross-sectional and also with sporting children of our country.

Results and Discussion:

Mean absolute vo2 max of school boys of 12 to 16 years was found to be improving significantly from 12 years to 16 years of age which is linear to the growth in their body weight. a steep increment was found between the age of 13 and 14, which corresponds to the age of rapid body weight development among the boys. On comparison with sporting children, Karnataka state school children found to be very much inferior in this variable. Mean Relative VO2 max of Karnataka school boys does not show any appreciable change from 12 to 16 years of age for boys and was found decreasing gradually from 12 years to 16 years of age. Statistically speaking there was a significant decrease in relative maximal aerobic capacity between 12 years boys and 13, 14, 15 and 16 years. and also found very much inferior to the sporting counterparts in this ability.

Decrement in the relative max with growing age, explicitly noticed in this study, adversely affects and fitness and is an alarming situation. This indicates the inadequacy of physical activities among the children. There is an urgent genuine need to reform the educational policy, with an objective to offer adequate physical activities for the school children and creating awareness of health and fitness in the society. The programmer evolved out of these objectives should aim at improving all-round physical fitness to prevent hypo-kinetic diseases in later ages.

Relationship Of Selected Physiological And Mental Toughness Of College Men Volleyball Players With The Game Performance

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ABSTRACT

Physiology is the study of functions of the human body. Human physiology is the bird in the house of the mechanical, physical and biochemical functions of humans in good health, their organs, and the cells of which they are composed. Mental toughness is the most important psychological factor affecting the success of athletes. This study examined the relationship between game performance with selected physiological and mental toughness of volleyball players who have represented intercollegiate level, their age ranged from 18-21 years under the V.T.U. jurisdiction. The subjects were taken from Bangalore district studying in Bachelor Degree in Engineering coming under Bangalore Regional jurisdiction only. The parameters of physiological variables like blood pressure, heart rate and lung capacity were assessed. For the purpose to examine Mental Toughness, Mental Toughness Questionnaire (1995) prepared by Allan Goldberg was administered. The questionnaire comprised of 30 statements. Every statement had 2 possible responses i.e. True or False. The four point rating scale was employed to assess the game performances of the volleyball players during game situations. Data in the four skills namely serve, pass (service reception), attack and block were rated on a scale from zero to three. The rating of the players was done by three experienced and well known judges as per the rating scale during match situations. The statistical tool used was Pearson product moment correlation. The results of the study showed that there was a significant correlation between heart rate and lung capacity with the game performance of volleyball players except blood pressure. The volleyball players have good heart rate and lung capacity which influences on skill performance of the players. It is also exemplified that there exists a positive correlation between game performances with mental toughness. Developing Mental Toughness contains practical guidance on delivering techniques that will radically improve player's abilities to control the effects of stress and pressure.

Keywords : Physiological, Mental Toughness, Game performance.

INTRODUCTION : Successful game of volleyball needs ability of the players to generate good speed, agility, flexibility and incredible power in relation to anthropometrical, physiological and psychological effects during the play of game. Skills like serving, passing, attack and block are of utmost importance for a player at any level of play. Not merely skills but also physiological and psychological effects of a player will also contribute to the success of the player as well as of the team.

Physiology is the study of functions of the human body. Human physiology is the bird in the house of the mechanical, physical and biochemical functions of humans in good health, their

organs, and the cells of which they are composed. Most aspects of human physiology and animal's experimentation have provided much of the foundation of physiological knowledge.

Arterial blood pressure is the force of pressure, which the blood is exerting against the walls of the blood vessels in which it is contained. This pressure varies during the cardiac cycle. During ventricular systole, when the left ventricle is forcing blood into the aorta the pressure rises to a peak, systolic pressure. During diastole the pressure falls, the lowest value it reaches being called diastolic pressure. Systolic blood pressure is produced by the hearty muscle, which drives the contents of the ventricle into the already stretched arteries. During diastole the arteries are kept partly distended because the peripheral resistance of the arterioles prevents all the blood running off into the tissues. Thus the blood pressure depends partly on the force and volume of the blood pumped by the heart and partly on the contraction of the muscles in the walls of the arteries.

Heart rate is number of systolic and diastolic phases of heart per minute or the number of ventricular beats per minutes is heart rate. Heart rate is usually determined from pulse rate, which is number of pressure waves per minute along the carotid artery at the neck or the radial artery at the wrist. In normal individuals, Heart Rate equals pulse rate. The time period from one heart beat to the next is the interval between cardiac cycles; control of Heart Rate at rest and during work is maintained by the blood entering the heart and by the automatic nervous system. Stimulation of the vague nerves to the heart slows; down Heart Rate where as stimulation of the sympathetic nerves to the heart slows, down Heart Rate where as stimulation of the sympathetic nerves speeds up Heart Rate.

Vital capacity is defined as the largest volume of air that can be exhaled followed by deepest possible inhalation. Pulse rate as a wave of distension and elongation that is felt in an artery wall due to the contraction of the left ventricle forcing blood into the already full aorta. The basis of peak respiratory flow for monitoring the ventilatory function were the amount of air and maximum rate of flow during an expiration followed by a deepest possible inspiration. This can be measured with a peak flow meter. Vital capacity may be defined that as it's the largest volume of air that human can exert after the maximum inhalation.

Many studies have examined the relationship between physical and physiological characteristics and overall playing ability in volleyball players. These studies have shown certain characteristics to be advantageous to players, including greater height, greater vertical jump distance, greater mass, greater upper body strength and lower body fat %. However, each study compared the variables to some measure of overall laying ability and not to the skill performance. An athlete can have a high overall playing ability but be weak in one specific skill. Identifying those factors that are characteristic to high performance in a certain skill may provide a focus for improvement in that skill. Once weaknesses are revealed, the athlete may then concentrate on improving the factors that lead to high performance in that skill.

Mental toughness is having the natural or developed psychological edge, which enables to generally cope better than opponents with the many demands (competition, training, and lifestyle) that sport places on a performer, and specifically, be more consistent and better than opponents in remaining determined, focused, confident, and in control under pressure."

Many coaches are becoming aware of the importance of developing mentally tough performers and are designing programs to develop mental toughness in their athletes. Though the concept of mental toughness continues to attract the interest of researchers throughout the field of sport psychology, it remains largely unexplored in many respects.

Mental toughness is about how effectively individuals respond to stress, pressure and challenge. Understanding this concept is essential to improving performance for both the individual and organization, and this ground-breaking book explains mental toughness clearly and effectively. The mental toughness is an important psychological characteristic of sport performance.

The assumption has been accepted that mentally tough sportsperson typically perform better, but no investigations have specifically examined this relationship. Therefore, this study sought to examine the relationship between physiological variables and mental toughness with sports performance in college volleyball players.

IMPORTANCE OF THE STUDY

Mental toughness is a common term used in sport atmospheres, and it is usually linked with some evaluation of performance. This study will provide support for the assumptions of coaches, athletes, and other sport professionals that mental toughness is important for successful performance in sport. Because this research examines the relationship between successful sport performance with physiological variables and mental toughness in athletes, the results will attempt to demonstrate that players who score the highest on mental toughness will also achieve consistently better on the court.

OBJECTIVE OF THE STUDY :

The objective of the present study is to examine the relationship of physiological and mental toughness with game performance of volleyball players.

MATERIAL AND METHODS :

Sample: The present study was carried out on forty male volleyball players who have represented intercollegiate level, their age ranged from 18-21 years under the V.T.U. jurisdiction. The subjects were taken from Bangalore district studying Bachelor Degree in Engineering stream coming under Bangalore Regional jurisdiction only

Variables selected: The parameters of physiological variables such as systolic and diastolic blood pressure, heart rate by step up test and lung capacity by using peak flow meter were assessed. For the purpose to examine Mental Toughness, Mental Toughness Questionnaire (1995) prepared by Allan Goldberg was administered. The questionnaire comprised of 30 statements. Every statement had 2 possible responses i.e. True or False. The four point rating scale was employed to assess the game performances of the volleyball players during game situations. Data in the four skills namely serve, pass (service reception), attack and block were rated on a scale from zero to three. The rating of the players was done by three experienced and well known judges as per the rating scale during match situations.

Statistical Analysis: Pearson's Coefficient of Correlation was applied to establish the relationship among the variables measured. Data were analyzed using SPSS (Statistical Package for Social Science) version 11.5 at 0.05 and 0.01 level of probability was used to indicate statistical significance.

ANALYSIS AND INTERPRETATION OF DATA:

The results pertaining to the significant relationship between the selected physiological variables and game performance of volleyball players by using Pearson's Coefficient of Correlation are presented in the following tables.

Table-1 Table showing relationship between selected physiological variables and game performance of volleyball players.

Game Performance and	Physiological Variable	N	Df (N-2)	'r' value	Level significance of
Game Performance with	Blood Pressure				
	- Systolic Blood Pressure	40	38	-0.117	NS
	- Diastolic Blood Pressure	40	38	- 0.038	NS
	Heart Rate	40	38	0.624	**
	Lung Capacity	40	38	0.592	**

* Significant at 0.05 level ; ** Significant at 0.01 level.

The above table shows the analysis of the game performance with the selected physiological variables is represented. From the above table it is clearly illustrated that there exists a positive correlation between game performance with heart rate ($r=0.624$; $P<0.01$) and Long capacity ($r=0.592$; $P<0.01$), in addition it is also showed that the game performance is not correlated with blood pressure.

Table-2 Table showing relationship between mental toughness and game performance of volleyball players.

Game Performance and Mental Toughness with facets		N	Df (N-2)	'r' value	Level significance of
Game Performance with	Reboundability	40	38	0.333	*
	Ability to Handle Pressure	40	38	0.435	**
	Winning Concentration Ability	40	38	0.632	**
	Self Confidence	40	38	0.487	**
	Goal Setting	40	38	0.567	**
	Mental Toughness (Total)	40	38	0.683	**

* Significant at 0.05 level ; ** Significant at 0.01 level

The above table illustrated the analysis of the game performance with the mental toughness is represented. From the above table it is clearly exemplified that there exists a positive correlation between game performance with reboundability ($r=0.333$; $P<0.05$), handle pressure ability ($r=0.435$; $P<0.01$), winning concentration ability ($r=0.632$; $P<0.01$), self confidence ($r=0.487$; $P<0.01$), goal setting ($r=0.567$; $P<0.01$) and mental toughness (total) ($r=0.683$; $P<0.01$).

DISCUSSION OF RESULTS

Volleyball is a game played indoor or outdoor by teams whose members seek to score points in the course of hitting a ball back and forth across a net. It is a popular game in the matter of techniques, blocking as well as jumps and smashes play a crucial part in volleyball. The results of the study showed that there was a significant correlation between heart rate and lung capacity with the game performance of volleyball players except blood pressure. The volleyball players have good heart rate and lung capacity which influences on skill performance of the players. The study also concluded that there was a significant correlation between mental toughness and its facets with game performance of volleyball players. The volleyball players should involve preparing mentally to participate in various tactical moves in different situations and body contact positions during the game. Necessary care needs to be taken in training to enhance or cope up the mental toughness of volleyball players in specific and team games in general.

CONCLUSION :

Past studies have shown certain characteristics to be advantageous to players, including greater height, greater vertical jump greater mass, greater upper body strength and lower body fat %. However, each study compared the variables to some measure of overall laying ability and not to the skill performance. Volleyball player can have a high overall playing ability but be weak in one specific skill. Identifying those factors that are characteristic to high performance in a certain skill may provide a focus for improvement in that skill. Once weaknesses are revealed, the player may then concentrate on improving the factors that lead to high performance in that skill. Interventions that manipulate threat assessments among low mentally tough sportspersons have the potential to facilitate better emotional and coping responses, which ultimately may enhance sport performance. Developing Mental Toughness contains practical guidance on delivering techniques that will radically improve sportsperson's abilities to control the effects of stress and pressure. Mental toughness is having the natural or developed psychological edge that predicts Athletes success. Exposure hard conditions (competition; exercise) can Development Mental Toughness. Various factors such as time situation; competitive experience; age; activity level; nature of sport and individual differences...have important roles in shaping and creating good mental skills.

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Analytical Study On Women Physical Fitness Of Basket Ball Players & Hand Ball Players In Kakatiya University

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Introduction

Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity. It ranges from optimal activities in all aspects of life through high and low levels of different physical fitness to serve disease and dysfunction. The ability to function efficiently and effectively is to enjoy leisure, to be healthy, to resist disease and to cope with emergency situations. Health related components of physical fitness include body composition, cardiovascular fitness, flexibility, muscular endurance and strength. Skill related components include agility, balance, coordination, power, reaction time and speed. The relative importance of each of the components varies for each sport. Physical fitness is not only sport specific it may also be position specific, combined good health and physical development. The object of any program of physical fitness is to maximize any individual's health, strength, endurance and skill relative to age, sex, body build and physiology. These ends can only be realized through conscientious regulation of exercise, rest, diet and periodic medical examinations. Exercise should be regular and vigorous, but begun slowly and only gradually increased in strenuousness. Popular exercise methods include jogging, cycling and the use of body-building machines. It is more important that periods of sleep be regular and restful than that they extend any fixed number of hours.

Significance of the Study:

The study is to determine the women physical fitness of the basket ball players and hand ball players of Kakatiya University.

Methodology:

The study under report focuses the women physical fitness, basis of team game players, which is the order of the day in everlasting sports scenario. The study was formulated based on the simple random sampling. The samples were collected from the 50 University basketball players and 50 University Handball players in Kakatiya University in the age group of 18-21 years were considered. Physical fitness test was administrated on University players i.e. the speed (50m run) and endurance (Cooper Test - 12 minutes run/walk).

Results and Discussions

The results pertaining to the study are present in the following,

Table – 1 Showing the Mean Values, SD, df, 't' value and p-value between basket ball players and hand ball players of kakatiya University Players in relation to their speed (50m run).

Speed (50 m run)

Sl. No.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Basket ball Players	50	7.00	0.46	2.601	0.01
2.	Hand ball Players	50	6.11	0.34		

Table – 2 Showing the Mean Values, SD, df, 't' value and p-value between basket ball players and hand ball players of kakatiya University Players in relation to their Endurance (cooper test).
Endurance (Cooper Test - 12 minutes run/walk)

Sl. No.	Subjects	N	Mean	S.D.	't' ratio	P value
1.	Basket ball Players	50	1980	288.56	4.01	0.01
2.	Hand ball Players	50	2195	239.95		

Conclusion:

The study under report has scientifically examined the various factors which influence the power game, especially the women physical fitness variables pertinent to speed and endurance. A trained individual is in a better state of physical fitness than the person who follows a sedentary, inactive life. When two persons, one trained and one untrained or approximately the same build are performing the same amount of moderate muscular work, evidence indicates that the trained individual has a lower oxygen consumption, lower pulse rate, larger stroke volume poor heartbeat, less in blood pressure, greater red and white blood cell counts, slower rate of breathing, lower rate of lactic acid formation, and a faster return to normal of blood pressure and heart rate.

The heart becomes more efficient and is able to circulate more blood while bearing less frequently. Furthermore, in work of a strenuous nature that cannot be performed for any great period of time the trained individuals has greater endurance, a capacity for higher oxygen consumption, and a faster return to normal of heart rate and blood pressure. Training results in a more efficient organism. Since a greater efficiency of heart action enables a larger flow of blood to reach the muscles and thus ensure an increased supply of fuel and oxygen, more work is performed at less cost; improvements in strength, power, neuromuscular coordination, and endurance occur, coordination and timing of movements as better, and an improved state of physical fitness results. Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity. It ranges from optimal activities in all aspects of life through high and low levels of different physical fitness to serve disease and dysfunction.

Hence it is concluded that the physical fitness plays a vital role on the performance of the players. Physical activity can act as an antidote to some kinds of fatigue; youngsters will be harmed through sustained exercise – if they are fit, their physical endurance is great, and the exercise will be conducive to good health.

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Analytical Study On Specific Psychomotor Skills And Psychological Factors Of Football Players & Hockey Players In Telangana Universities

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Introduction

It is an emerging field of psychology is viewed as an attempt to understand describe and explain the behaviour of sports persons in athletic setting both practice and competitive- with a view to enhance performance. Today there is no sport without sports psychology. It is well known that psychology grew out of philosophy and within a few decades of the modern era of science and education, it shaped into a huge banyan tree with hundreds of branches and offshoots making it difficult to distinguish its stem from its tentacles. sports psychology is a recent phenomenon-a distinct addition to that ever-expanding family of psychology. Known as hybrid science, a fusion of sport, science and psychology-sports psychology is all about sports behavior especially with muscle-mind interactions, there influences and their outcomes in the context of sports, which is basically a from of active reaction, but which has turned intensely competitive on account of the growing Olympism well over a century. Sports Psychological intervention coping strategies, mental skills such as imagining concentrating, are focusing excreta. Team interaction and convention are all practical tasks in which athlete's teachers/coaches and sports psychologists play reciprocally cooperative but decisive roles. All other things being equal athletic event/sports are winning in the mind. One of the goals of applied sports psychology is to investigate human performance stabilize and to enhance sports performance.

STATEMENT OF THE PROBLEM

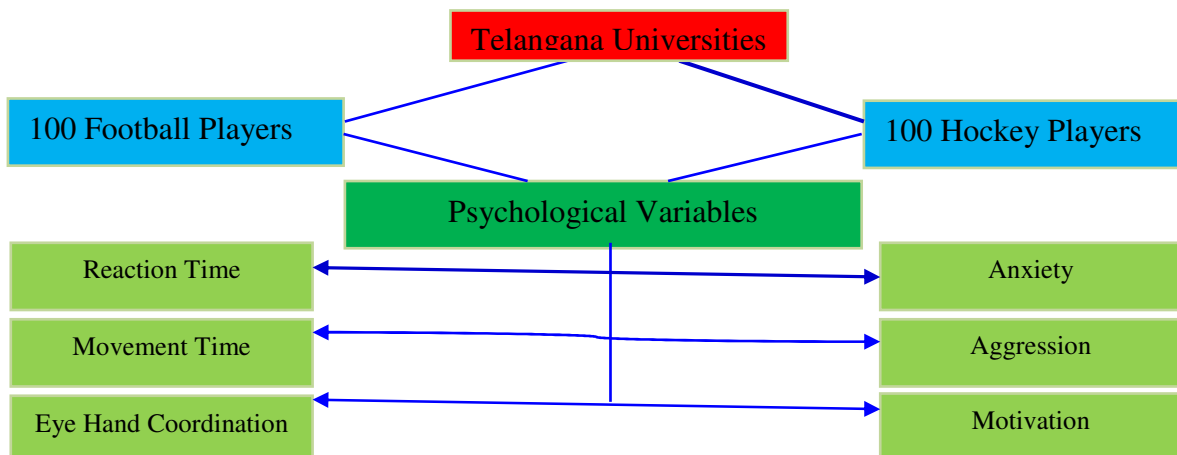
The purpose of the study is to find out whether or not any significant difference found on reaction time, movement time, eye hand coordination, Motivation, Anxiety and Aggression of football and hockey players in Telangana Universities.

OBJECTIVE OF THE STUDY

The research will find out the reaction time, movement time, eye hand coordination, Motivation, Anxiety and Aggression of football and hockey players in Telangana Universities.

DESIGN OF THE STUDY

The diagrammatic presentation was presented hereunder.



SAMPLE OF THE STUDY

The study was formulated based on the simple random sampling. The samples were collected from the 100 football players and 100 hockey players in the age group of 20- 25 years from 2 universities of Telangana region.

Showing the Sample of the study

Sl.No	Name of the Universities	Number of Foot ball players	Number of Hockey players	Number of subjects
1.	Telangana University	50	50	100
2.	Kakatiya University	50	50	100

TOOLS USED

Reaction time – electronic reaction timer or chronometer.

Movement time – nelson speed of movement.

Eye-hand coordination – Lafayette electrical operator (two arm tracing apparatus).

Anxiety- Anxiety Test (SCAT) that was developed by Martens, Vealey, and Burton

Aggression

Motivation- Sinha scale was adopted for opinionnaire

DATA COLLECTION PROCEDURE

The subjects of the study were in the age group between 20 to 25years from two groups i.e., football players and hockey players. The football players consisting 100 men and the hockey players consisting of 100 men of Kakatiya University and Telangana University.

RESULTS & DISCUSSIONS

Table – 1 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their simple visual reaction time on left hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1547	0.0244	98	5.514	0.000
2.	Hockey players	50	0.1994	0.0441			

Table -2 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their simple visual reaction time on right hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1661	0.0231	98	7.071	0.000
2.	Hockey players	50	0.2049	0.0481			

Table -3 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their simple audio reaction time on left hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1538	0.0276	98	4.735	0.000
2.	Hockey players	50	0.1972	0.0443			

Table- 4 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their simple audio reaction time on right hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1656	0.0275	98	5.518	0.000
2.	Hockey players	50	0.2062	0.0338			

Table -5 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their simple visual reaction time on left hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1631	0.0267	98	6.534	0.000
2.	Hockey players	50	0.2153	0.0429			

Table -6 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their simple visual reaction time on right hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1647	0.0295	98	6.566	0.000
2.	Hockey players	50	0.2111	0.0329			

Table-7 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their simple audio reaction time on left hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1559	0.0246	98	6.261	0.000
2.	Hockey players	50	0.2039	0.0459			

Table -8 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their simple visual reaction time on right hand

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	0.1618	0.0263	98	5.288	0.000
2.	Hockey players	50	0.2033	0.0470			

Table -9 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their movement time

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	1.9801	0.1935	98	4.550	0.000
2.	Hockey players	25	2.1240	0.0973			

Table-10 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their movement time

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	1.5429	0.1736	98	3.420	0.000
2.	Hockey players	25	2.0968	0.0634			

Table -11 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their Eye-hand coordination

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	8.1032	1.4256	98	5.416	0.000
2.	Hockey players	50	6.8361	1.0426			

Table -12 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their Eye-hand coordination

Sl. No.	Subjects	No. of subjects	Mean	SD	df.	't' value	p-value
1.	Football players	50	9.1160	1.6690	98	6.737	0.000
2.	Hockey players	50	7.0529	1.3720			

Table -13 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their Motivation

Sl. No.	Subjects	N	Mean	S.D.	df.	't'-ratio	P- value
1.	Football Players	50	29.82	7.28	98	3.86	0.00
2.	Hockey Players	50	27.08	9.46			

Table -14 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their Motivation

Sl. No.	Subjects	N	Mean	S.D.	df	't' ratio	P value
1.	Football Players	50	30.84	8.96	98	4.26	0.01
2.	Hockey Players	50	27.68	9.76			

Table -15 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Telangana University Players in relation to their Anxiety

Sl. No.	Subjects	N	Mean	S.D.	df.	't'-ratio	P -value
1.	Football Players	50	16.85	6.98	98	2.18	0.01
2.	Hockey Players	50	18.24	7.95			

Table -16 Showing the Mean Values, SD, df, 't' value and p-value between football players and hockey players of Kakatiya University Players in relation to their Anxiety

Sl. No.	Subjects	N	Mean	S.D.	df	't' ratio	P value
1.	Football Players	50	16.78	6.56	98	2.18	0.05
2.	Hockey Players	50	17.64	6.97			

CONCLUSION

. Sport psychologists can help the team players to cope with the pressures of sport by helping individual athletes to learn different coping skills and stress management skills.

In the present scenario the sports psychology have been playing a significant role in the creeping performance of the games. The fluctuations noticed specific psychomotor skills will be attributed to the educational background of the football and hockey players. Finally it was observed that foot ball players at Telangana University have shown low level of anxiety when comparative to hockey players as mean average score were less to foot ball players when compared to hockey players, the reasons for the high level of anxiety may attributed to their level of participating intensity of participation and various other environmental factors.

For the present study psychological factors noticed attributed to the educational background of the football and hockey players. But, the fact here was both players were well trained in all aspects due to their difference in exposure to various situations the results differ. By and large, the players exposed at higher levels of competition need to be fit physically, mentally and technically, so that the standards of the power game will remain at its best all the time at international level.

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A comparative Study on the Speed and Agility among Volley Ball and Hand Ball Players of Osmania University

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INTRODUCTION:Physical fitness comprises two related concepts: general fitness (a state of health and well-being), and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise and enough rest. In previous years fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient. In current contexts, Physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases and to meet emergency situations.

Physical Fitness is a level of health in which you have muscular endurance, muscular strength, flexibility, cardiovascular endurance and lean body composition. Physical fitness is achieved by the regular movement of muscles through a variety of exercises. Maintaining Physical Fitness is a life-long process and should always be part of your lifestyle. People with disabilities can also reach a measure of Physical fitness by doing exercises appropriate for their conditions.

The characteristics of physical fitness such as strength, endurance, agility, balance and flexibility are essential for physiological function and good health. Physically fit persons get the maximum satisfaction in every day life, better physical co-ordination, mental judgement and emotional control. Physically fit persons are able to withstand fatigue for longer periods and are better equipped

Speed is a key component of physical fitness which is very important for Volley Ball players and Hand Ball players for high level of performance in competition. Speed is performance prerequisite to do motor actions under given conditions in minimum of time. Speed is the quickness of movement of limb, whether this is the legs of runner or the arm of the short putter. Speed is an integral part of every part of every sport and can be expressed as any one of or combination of, the following: maximum speed, elastic strength, speed endurance. The definition of a speed from a scientific standpoint is simply distance/time, but this is rather simplistic view of speed. A more accurate definition of speed is this: speed is the ability to move as fast as possible, through the optimal range of motion, in a deliberate and intentional manner, in particular direction. Speed is not just measured on how fast a person is either; there are several components of measurement that give a complete picture of a player's speed.

Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964.

On February 9, 1895, in Holyoke, Massachusetts (USA), William G. Morgan, a YMCA physical education director, created a new game called *Mintonette* as a pastime to be played preferably indoors and by any number of players. The game took some of its characteristics from tennis and handball. Another indoor sport, basketball, was catching on in the area, having been invented just

ten miles (sixteen kilometers) away in the city of Springfield only four years before. Mintonette was designed to be an indoor sport less rough than basketball for older members of the YMCA, while still requiring a bit of athletic effort

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

Handball (also known as team handball, Olympic handball, European handball or Borden ball) is a team sport in which two teams of seven players each (six outfield players and a goalkeeper) pass a ball to throw it into the goal of the other team. A standard match consists of two periods of 30 minutes, and the team with the most goals scored wins. Modern handball is usually played indoors, but outdoor variants exist in the forms of field handball and Czech handball (which were more common in the past) and beach handball (also called sandball). The game is quite fast and includes body contact as the defenders try to stop the attackers from approaching the goal. Contact is only allowed when the defensive player is completely in front of the offensive player; i.e., between the offensive player and the goal. Any contact from the side or especially from behind is considered dangerous and is usually met with penalties.

Method:

For the present study 30 Male Volley Ball and 30 Male Hand Ball were taken for the study of Osmania University between the age group 20 to 22 Years. To measure the Speed and agility shuttle run, 50 Yard Dash were used for study. Before administering the tests all the subjects were oriented to the test in procedure and the objectives of the test.

RESULTS AND DISCUSSION:

Table – I

Test Items	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
50 Yard	Volley Ball Players	30	8.01	0.23	0.07	-1.80	58.00	0.09
	Hand Ball Players	30	8.29	0.45	0.14			
Shuttle Run	Volley Ball Players	30	15.48	1.20	0.37	2.53	58.00	0.02
	Hand Ball Players	30	14.10	0.56	0.17			

In Table I it was found Volley Ball Players are good in 50 Yard Dash, and Hand Ball Players are good in Shuttle Run. The Average Speed of Volley Players are 8.01 compare to 8.29 of Hand Ball Players and Average agility speed of Hand Ball Players are 14.10 compare to Volley Ball Players 15.48. Hence Hand Ball Players are agile compare to Volley Ball Players.

Conclusions: It is concluded that Volley Ball Players are having good speed and Hand ball players are having good agility.

Recommendations: It is recommended that Volley Ball Players and Hand Ball Players must be given sports training in the ground to achieve the good physical ability. Similar Studies can be conducted on females and also other sports and games.

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A Comparative Study Of Motor Fitness And Selected Anthropometric Variables Among The State Level Cricketers And Volleyball Players

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ABSTRACT

The aim of the present study was to find out the standard and compare of the motor fitness and selected anthropometric variables of the state level cricketers and volleyball players. Physical fitness is a part of total fitness and similarly motor fitness is a part of physical fitness. In games and sports motor fitness is of particular important. Like motor fitness anthropometric variables were the indicators of performance ability of an individual. Ten state level cricketers and equal numbers of volleyball players were selected as the subject for that present study. Among motor fitness parameter leg explosive strength by standing broad jump, shoulder strength by chins up, flexibility by bridge test and agility by 10x4 motor shuttle run were measured. Among anthropometric variables height, weight biceps and calf circumstance, length of the upper and lower limb were measured. Result showed that the volleyball players were more superior in height and weight but in motor fitness cricketers were superior then the volleyball players, except flexibility. In anthropometric variables volleyball players are superior in lower and upper limb differences, but cricketers are much superior in biceps and triceps differences.

Key words: Motor fitness, Anthropometry, Cricket, Volleyball

Introduction:

Physical fitness is a part of total fitness and similarly the motor fitness is a part of physical fitness. In games and sports motor fitness is of particular importance. Like motor fitness anthropometric variables are the indicators of performance ability of an individual Anthropometric variables like height, weight, biceps, triceps circumference, lower limb, upper limb length played an important role in performance ability of an individual. Through the proper measurement of different anthropometric variables we can understand the demand of physical characteristic according to the merit of the game. Several research found that the relationships of morphological, anatomical, structural characteristics with physiological and functional phenomenon. Present study was planned to analyze the status of motor fitness and Anthropometric variables of state level volleyball players and cricketers. It was believed that the result of the present study would be helpful in identifying performance potential and formulating training schedule.

Purpose of the study

To understand the standard of motor fitness of both for volleyball and cricket players.

To understand the standard of anthropometric variables of both the groups.

To compare the leg explosive strength, Shoulder strength, agility, trunk flexibility, among the state level cricketers and volleyball players.

To ascertain the strength and weakness of the volleyball and cricket players in Motor Fitness Components.

To compare the biceps triceps circumference, lower limb and upper limb length, among the state level cricketers and volleyball players.

Procedure

Subjects :Ten (N=10) state level cricketers and Ten (N=10) state level volleyball players were selected at randomly for this present study.

Criterion Measures :Selected test item were selected as criterion measures for that study:

Motor fitness was measured by a battery of tests including.

Leg explosive strength by standing broad jump.

Shoulder strength by chin ups. Agility by 10x4m. Shuttle run and

Flexibility by Bridge up test. Anthropometric Variables were measured by measuring

Height was measured by the Stadiometer.

Weight was measured by weighing machine. Biceps and triceps circumference by measuring tape. Lower limb and upper limb length by measuring tape.

Result and Discussion:

Data on selected anthropometric and motor fitness variables are presented in tabular and graphical forms.

Table – 1

Testing of Significant of Different Between Mean Value of Motor Fitness Parameter of Volleyballers and Cricketers.

Motor fitness parameter	Mean value of volleyballers	Mean value of cricketers	"t" Value	Remarks
Standing Broad jump	2.18± 08	2.34± 04	4.19	Significance at 0.05
Chin Ups	7.20±1.03	10.5±70	4.71	Significance at 0.05
Bridge Test	64.97±2.46	59.22±2.31	3.80	Significance at 0.05
10x4 SHUTTLE RUN	11.42±57	9.99±68	4.08	Significance at 0.05

DF = 18

It is seen from Table-1 that the volleyball players were greater leg explosive strength and flexibility of trunk than cricketers respectively, to be significance at .05 level "t" value should be greater than 2.10. But in shoulder strength and in agility, cricketers were better than the volleyball players at 0.05 level of confidence.

Table – 2

Testing of Significant of Between Mean Value of Anthropometric Parameter and Cricketers.

Anthropometric Parameter	Mean value of volleyballers	Mean value of cricketers	"t" Value	Remarks
Body height (cm)	172.51±4.09	160±4.52	2.52	Significance at 0.05
Body weight (kg)	59.7±2.83	53.5±1.08	4.59	Significance at 0.05
Biceps circumference	21.5±2.17	22.6±2.17	0.13	Not significance
Triceps circumference	25.8±2.61	26.5±2.59	0.27	Not Significance
Length of upper Limb	83.5±3.86	72.7±4.94	3.58	Significance at 0.05
Length of Lower Limb	93.8±4.28	83.3±5.12	3.75	Significance at 0.05

DF = 18

It is seen from the table values that the mean significance between two groups in all the four selected anthropometric parameters were statistical significant at 0.05 level. But in Biceps and Triceps circumference there were no statistical significant found.

Conclusion

Volleyball players were significantly taller and heavier than cricketers.

In motor fitness components – shoulder strength, and agility, cricketers were significantly better than the volleyball players. but in trunk flexibility and leg explosive strength volleyball players were superior than the cricket players. But in upper and lower limb length volleyball player were significantly better than the cricketers. In biceps and triceps circumferences – volleyballers and cricketers were more or less identical.

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A comparative study of vital capacity of Physical Education Students and Non Physical Education

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ABSTRACT

The purpose of the study was to compare vital capacity of Physical Education Students and Non Physical Education Students Andhra University, Visakhapatnam, Andhra Pradesh. For the purpose of the study sixty students were selected randomly from the Department of Physical Education and other Education, Andhra University, Visakhapatnam, Andhra Pradesh. The vital capacity was measured by using regular spirometer. To compare the vital capacity of Physical Education Students and Non Physical Education Students, Independents t-test was used. The level of significance was chosen as 0.05 level. Results of this study reveal that there was significant difference exist between Physical Education Students and Non Physical Education Students. On the basis of finding and available literature it can be concluded that the Physical Education Students vital capacity was better than the Non Physical Education Students.

Key words: Vital capacity

Introduction

In the present time every person wants to be become a sportsman, but due to lack of time they cannot do any physical activities and not playing any game, which may affect their physical fitness efficiency. As we know that regular exercise can increase our physical efficiency as well as provide us good and well shaped physique. Physical exercise is any bodily activity that enhance or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the “diseases of affluence” such as heart disease, cardiovascular disease. Type 2 diabetes and obesity. It also improves mental health, helps prevent depression, helps to promote or maintain positive self esteem, and can even augment an individual's sex appeal or body image, which is also found to be linked with higher levels of self esteem. Childhood obesity is a growing global concern and physical exercise may help decrease some of the effects of childhood and adult obesity. Health care providers often call exercise the “miracle” or “wonder” drug-eluding to the wide variety of proven benefits that it provides. The beneficial effect of exercise on the cardiovascular system is well documented. There is a direct relation between physical inactivity and cardiovascular mortality, and physical inactivity is an independent risk factor for the development of coronary artery disease. There is a dose-response relation between the amount of exerciser performed from approximately 700 to 2000 kcal of energy expenditure per week and all-cause mortality and cardiovascular disease mortality in middle-aged and elderly populations. The greatest potential for reduced mortality is in the sedentary who become moderately active. Most beneficial effects of physical activity on cardiovascular disease mortality can be attained through moderate-intensity activity (40% to 60%) of maximal oxygen uptake, depending on age), persons who modify their behaviour after myocardial infarction to include regular exercise have improved rates of survival. Persons who remain sedentary have the highest risk for all-cause and cardiovascular disease mortality. Vital capacity is the maximum amount of air a person can expel from the lungs after a maximum inspiration. It is equal to the inspiratory reserve volume plus the tidal volume plus the expiratory reserve volume. A person's vital capacity can be measured by a spirometer which can

be a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. The unit that is used to determine this vital capacity is the milliliter (ml). A normal adult has a vital capacity between 3 and 5 litres. Predicted normal values for VC can be calculated online and depend on age, sex, height, weight and ethnicity as well as the research study that they are based upon.

Object of the study

Objective of the study was to compare the vital capacity of Physical Education Students and Non Physical Education Students.

Methodology

Subjects

For the purpose of this study sixty students selected, 30 from the Physical Education and 30 from other education who were studied in Andhra University, Visakhapatnam, Andhra Pradesh were selected randomly. Their age ranged from 20-25 years.

Criterion Measures

To measure the Vital capacity, wet spirometer was used and it was measured in liter.

Collection of data

Data was collected from the student at the morning session. The wet spirometer was given to the students and also instruction was given properly to them by researcher. Total three trials were given to the students, however the best score was mentioned.

Statistical technique

To find out the significance difference between the vital capacity of Physical Education Students and Non Physical Education Students Independent – T-test was used. The level of significance was set at 0.05 levels.

Table – 1

COMPARISON OF THE MEANS OF VITAL CAPACITY OF PHYSICAL EDUCATION STUDENTS AND NON PHYSICAL EDUCATION STUDENTS

Group	Mean	Standard Deviation	t-ratio
Physical Education	3.01	0.43	5.69*
Non Physical Education	2.99	0.39	

*Significant at 0.05 level
t .05 (58) = 2.00

Finding table clearly indicates that there is significant difference in Vital Capacity of Physical Education Students and Non Physical Education Students. Finding of the study reveal that the obtained 't' value of Vital Capacity is Significant as tabulated value at .05 level is 2.00 lower than the obtained value.

Conclusions:Significant difference was found in Vital Capacity between Physical Education Students and Non Physical Education Students.

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Effect Of Yogic Practice And Aerobic Exercise On Vital Capacity And Blood Pressure Among School Boys

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Abstract

The purpose of the study was to find out the effect of yogic practices and aerobic exercise on vital capacity and blood pressure. Thirty school aged boys with age between 15 and 17 years were selected for the study. They were divided into three equal groups, each group consisted of ten subjects, in which Group I underwent yogic practice and group II underwent aerobic exercise, five days per week for twelve weeks and group III acted as control, who did not participate in any training. The subjects were tested on selected criterion variables such as vital capacity, systolic and diastolic blood pressure at prior to and immediately after the training period. Vital capacity was assessed by using wet spirometer. Blood pressure was measured with the help of sphygmomanometer. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental groups and control group on selected criterion variables separately. Since, there were three groups were involved, the Scheffé S test was used to find out which of the adjusted post test mean was differ significantly. The selected criterion variables such as vital capacity was improved significantly for both the training groups when compared with the control group and the systolic and diastolic blood pressure were reduced significantly for yogic practice group and aerobic exercise group. But there was no significant difference was found between the training groups on selected criterion variables.

Introduction

Yogasanas are Indian's unique contribution to physical education. Yoga and physical education may be compared to two bullocks hitched to shaft as they are for the judicious blending of the education of body and the mind. There is no denial of the fact that yoga and physical education attach importance by gaining the benefits of physical health, mental health, physical fitness and peace of mind through their regular practices. Physical education concerns with anatomical aspects of the physique with its physiological reactions for a given activity. The ultimate aim of which is to enjoy a good health and optimum fitness. Yoga is providing a multidimensional development and it has now become an adjunct to physical education.

Aerobic exercise uses continuous, rhythmic movement of large muscle groups to strengthen your heart and lungs (cardiovascular system). When you exercise, your muscles demand more oxygen-rich blood. This makes your heart beat faster to keep up. When you follow a program of regular aerobic exercise, your cardiovascular system grows stronger and can meet the muscles' demands without as much effort. In addition, your muscles adapt and become more efficient at performing activity.

Aerobic exercise includes any type of exercise, typically those performed at moderate levels of intensity for extended periods of time, that maintains an increased heart rate. In such exercise, oxygen is used to "burn" fats and glucose in order to produce adenosine triphosphate, the basic energy carrier for all cells. Initially during aerobic exercise, glycogen is broken down to produce glucose, but in its absence, fat metabolism is initiated instead. The latter is a slow process, and is accompanied by a decline in performance level. The switch to fat as fuel is a major cause of what marathon runners call "hitting the wall." There are various types of aerobic exercise. In general, aerobic exercise is one performed at a moderately high level of intensity over a long period of time. For example, running a long distance at a moderate pace is an aerobic exercise, but sprinting is not.

The volume of air inspired into, expired from, or contained within the lungs during breathing. One of the most useful measurements of lung volume is vital capacity: the maximal volume of air that can be forcefully exhaled after taking the deepest breath. Values vary from 3 litres to 6 litres. The actual value is not a very good indicator of fitness because it tends to vary for a number of reasons, including the size and sex of each individual. However, among individuals of the same size and sex, the vital capacity tends to be greater in those who exercise regularly. Usually, relatively fit and healthy individuals can exhale at least 83 per cent of their vital capacity in the first second of exhalation. At rest, only about half a litre of air is drawn into the lungs with each breath; this is known as the tidal volume. It increases with exercise until it reaches the vital capacity. The total amount of air inhaled each minute (ventilation rate) depends on both the depth and frequency of breathing. At rest, about 12 breaths per minute are taken so that the total volume of air inhaled is about 6 litres. During very strenuous exercise, this can increase to more than 100 litres a minute.

Methodology

The purpose of the study was to find out the effect of yogic practices and aerobic exercise on vital capacity and blood pressure. To achieve this purpose of the study, thirty school aged boys ages between 15 and 17 years were contacted and randomly selected as subjects. They were divided into three equal groups, each group consisted of ten subjects in which Group I underwent yogic practices and group II underwent aerobic exercises five days per week for twelve weeks and group III acted as control, who did not participate in any training. The subjects were tested on selected criterion variables such as vital capacity and systolic and diastolic blood pressure at prior to and immediately after the training period. The selected criterion variables such as vital capacity was measured by using wet spirometer and the systolic blood pressure and diastolic blood pressure were measured by using sphygmomanometer. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental groups 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.

Table - I

Analysis of Covariance and 'F' ratio for Vital capacity and Systolic and Diastolic Blood Pressure for Yogic Practice, Aerobic Exercise and Control Groups

Variable Name	Group Name	Yogic Practice Group	Aerobic Exercise Group	Control Group	'F' Ratio
Vital Capacity	Pre-test Mean \pm S.D	3.682 \pm 0.055	3.686 \pm 0.042	3.663 \pm 0.05	0.62
	Post-test Mean \pm S.D.	3.79 \pm 0.046	3.869 \pm 0.041	3.678 \pm 0.055	40.34*
	Adj. Post-test Mean \pm S.D.	3.792	3.863	3.685	200.54*
Systolic Blood Pressure	Pre-test Mean \pm S.D	130.6 \pm 11.38	134.20 \pm 6.55	128.1 \pm 7.79	0.47
	Post-test Mean \pm S.D.	128.10 \pm 10.8	123.10 \pm 3.51	135.6 \pm 7.79	6.264*
	Adj. Post-test Mean \pm S.D.	129.976	121.906	134.918	74.045*
Diastolic Blood Pressure	Pre-test Mean \pm S.D	85.00 \pm 5.437	86.7 \pm 4.715	86.8 \pm 5.731	0.363
	Post-test Mean \pm S.D.	83.80 \pm 5.432	84.2 \pm 4.541	87.30 \pm 5.869	1.302
	Adj. Post-test Mean \pm S.D.	84.958	83.671	86.671	55.769

* Significant at .05 level of confidence.

(Table value required for significant at .05 level of confidence with df 2 and 27 and 2 and 26 are 3.27 and 3.28).

Table - II

Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Selected Criterion Variables

Adjusted Post-test Mean on Vital Capacity					
Yogic Group	Practice Group	Aerobic Exercise Group	Control group	Mean Difference	Confidence interval at .05 level
3.792		3.863		0.071*	0.0305
3.792			3.685	0.107*	0.0305
		3.863	3.685	0.178*	0.0305
Adjusted Post-test Mean on Systolic Blood Pressure					
Yogic Group	Practice Group	Aerobic Exercise Group	Control group	Mean Difference	Confidence interval at .05 level
129.976		129.906		0.07	2.7986
129.976			134.918	4.742*	2.7986
		129.906	134.915	5.009*	2.7986
Adjusted Post-test Mean on Diastolic Blood Pressure					
Yogic Group	Practice Group	Aerobic Exercise Group	Control group	Mean Difference	Confidence interval at .05 level
84.958		83.671		1.287*	0.7398
84.958			86.671	1.713*	0.7398
		83.671	86.671	3.00*	0.7398

* Significant at .05 level of confidence.

Results: Table – I showed that there was a significant difference among yogic practice group, aerobic exercise group and control group on vital capacity and systolic and diastolic blood pressure. Table – II shows that the Scheffé S Test for the difference between adjusted post-test mean of yogic practice group and aerobic exercise group (0.071), and yogic practice group and control group (0.107) and aerobic exercise group and control group (0.178), which were significant at .05 level of confidence. Table – II shows that the Scheffé S Test for the difference between adjusted post-test mean difference in systolic blood pressure between yogic practice group and control group (4.742) and aerobic exercise group and control group (5.009) which, were significant at .05 level of confidence. But there was no significant difference between yogic practice group and aerobic exercise groups (0.07) on systolic blood pressure after the training programme. Table – II also shows that the Scheffé S Test for the difference between adjusted post-test mean difference in diastolic blood pressure between yogic practice group and aerobic exercise groups (1.287), yogic practice group and control group (1.713) and aerobic exercise group and control group (3.00), which, were significant at .05 level of confidence.

Conclusions:

Based on the results of the study, the following conclusion were drawn:

Participation in yoga and aerobic exercise resulted in a significant rise in vital capacity for experimental groups when compared with control group.

The aerobic exercise group showed significant reduction in systolic blood and diastolic pressure as compared to yogic practice group and control group.

Reference:

G. Feuersteins, *Yoga: The Technology of Ecstasy*, (Wellingborough: The Aquarian Press, 1990), p. 52.

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Politics in Indian Sports and Athletes: A Case Study

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Abstract

When propaganda works, it becomes conventional wisdom fairly quickly. As the Olympic torch fleets from hand to heroic hand on its way to the London Games, we offer it the aura of a tradition stretching back to that hoary past when this event was restricted to a few nude Greek men. There is certainly a very pre-electricity touch to this torch which conjures up visions of an olden golden age. A bit of reflection suggests that a torch could not have been much use, since the sports were held during daylight. In fact, this wheeze was dreamt up by the Nazis for the 1936 Berlin extravaganza as part of a publicity drive for Hitler's pseudo-white Aryan maniac delusions. The world destroyed Nazis, but kept the torch. Nor did the logo, of five interlinked circles, originate in some great architectural symbol of ancient Greece. It was born in the intelligent imagination of the man who reinvented the Olympics, Baron Pierre de Coubertin, when he saw a magazine advertisement for Dunlop bicycle tyres with a similar display. It might however be the most significant contribution made by an ad agency to world history. This logo was first revealed in 1914, so in two years it will reach its centenary moment. Surely this is sufficient cause for the advertising and sports industries to pool their considerable talents, and raise sufficient funds to celebrate in the manner to which they are accustomed. 1914 also saw the advent of the First World War, but no one seems particularly eager to recall that first instance of organised, relentless and often pointless carnage on a multinational scale.

Keywords: London Olympics, politics, India at London Olympics

Introduction

Baron Coubertin became convinced that sport was a better option than war, and who can blame him. But, to succeed, he argued, sport had to be organised on the lines of religion, with its own church, dogma and ritual. This profound insight is the basis of the commercial success of all contemporary sport. Each sport has its own Pope, who is infallible as long as he is in office. His support system is a cluster of cardinals and a structured order of bishops. This should end all questions about why politicians want to be at the command centre. It is not the sport that they love, but the infallibility that they crave. There is nothing democratic about sports management. Its culture is that of an opaque cabal and woe behold any heretic who attempts to disturb its secret society methods of insider trading, as the current Sports Minister Ajay Maken discovered when he thought that the Government of India was more important than the Board of Control for Cricket in India (BCCI). Chorus that silenced him was a formidable all party alliance. If the alliance that squashed Maken formed a coalition government in Delhi, it would be the strongest, most stable; policy focused ruling partnership in Indian history. Perhaps Rahul Gandhi should, when he takes effective charge of Congress in September, hire Lalit Modi as consultant to decipher the BCCI code of management.

If Modi is held up in London, there is Always jagmohan dalmiya waiting to serve in Calcutta. Politics, far more than sport, needs the glue of symbols. The BJP revived from a near-death experience in the 1984 General Elections by turning a brick into a magnet during its campaign for the construction of a temple at Ayodhya. The Gandhi cap has rather lost its adhesive quality for

the Congress. When its leaders are forced by protocol to wear them, they look faintly ridiculous. Moreover, Anna Hazare has co-opted the cap into his own brand image.

A torch could be a good substitute. One can visualise the excitement created by Youth Congress volunteers holding aloft the Torch of Reform, as they race from village to village, behind a bus with dancing and music on the upper deck. This in turn would ensure TV coverage, as news channels need the barest excuse to show free footage of Hindi film songs. TV would also encourage sponsors to jump in with free packets of sweets for children among the spectators. Every PCC would send one torch to an AICC session; all of them would be used to ignite one giant flame to inaugurate a fiery start. The Bhopal gas tragedy continues to evoke strong emotions in India today, as is entirely understandable. Now, the simmering discontent has raised the spectre of an Indian boycott of the 2012 Olympics to be held in London - the reason being that one of the 12 worldwide partners of the event is Dow Chemical, the company that purchased Union Carbide Corporation in 1999. Surely, that is going a step too far. While the discomfort of the Bhopal victims and their families is understandable, is it truly advisable to hold sport ransom to a political and legal issue in this manner?

The matter of Dow's liability for Bhopal is sub judice at the moment. When the decision comes, the government must pursue its implementation - and relief for the Bhopal victims to the fullest extent of its abilities. But that and Indian sport are parallel tracks; they don't intersect. What purpose would a boycott serve beyond having a negative impact on Indian sport? Indian sportspersons would lose the opportunity to participate in what probably is, for many of them, the culmination of a lifetime's endeavours. It would also impact the growth of sports infrastructure as a whole, which is often boosted on the back of impressive performances at such events.

Consider Jesse Owens the African-American athlete who participated in the 1936 Berlin Olympics despite the Nazi regime's espousal of Aryan supremacy, and snagged four gold medals, discomfiting Adolf Hitler. Or the 'Miracle on Ice' when a mostly amateur US ice hockey team played the Soviet team, then considered the world's best, at the 1980 Winter Olympics despite the Cold War being in full swing - and won. Those athletes didn't allow politics to trump sport; through the purity of their performances, they transcended politics and made statements more emphatic than any boycott could have done. Those are the precedents we should be looking at now.

India was the first colonised Asian nation to take part in the Olympics, in Antwerp, 1920. As such, the story is worth telling. Sports scholars Boria Majumdar and Nalin Mehta set about the task with impeccable research, in workman-like prose.

The story starts with the early sporting clubs, their role in shaping the Olympics movement in India, and the founding of the Indian Olympic Association. Pioneers like Sir Dorab Tata get a look-in, as do princely intrigue and a conscious attempt at nationalistic identity making.

Quite fittingly, Indian hockey gets special treatment. The Games from 1924-32 were magical; equally glorious was 1936 held in a nation where only one voice was heard, and only one arm raised but after much angst at the team's fallibility. The authors show how decline had set in by the early '50s, before the blows of AstroTurf and new rules.

One of the most satisfying aspects of the book is its emphasis on how sports and politics are braided. Two chapters put Indian Olympism in its post-Independence socio-political and nation-making contexts. The competitive politics of the newly independent nations of Asia unfolded through the Asian Games itself a part of the Olympics movement. The Delhi Asia f 1951 is seen through the prism of the Nehruvian idea of India's centrality in a new world order. Likewise, the 1982 Asia is mined for the transformative energy it unleashed the creation of a new national network led to a revolution in advertising, helped create a new consumer class, and built a base for the satellite TV boom.

The statistically inclined ought to be excited by the appendix a record of all our Olympians and their performances. It's quite a feat of collation. The authors grapple with huge cast players, administrators, patrons over nine decades. Thematically arranged and cogently argued, their central task of recreating each role is admirable. Haile Gebrselassie once said at a World championship that it was the Olympic gold medal that mattered most to him since not many in Ethiopia bothered about anything else.

In India, once every four years, the athletes look forward to participating in the Olympics. If after the Beijing Games there has been an added enthusiasm it is in the belief that Indians could also

win medals at the Games as shown by Abhinav Bindra, Vijender Singh and Sushil Kumar. Now, with just 140 days left for the start of the London Olympics, the athletes are concerned that there is uncertainty surrounding India's participation in the Games.

It is not an ideal situation to concentrate on the task ahead, obviously the toughest for all the sportspersons, no matter that the government could be providing financial and material support.

The athletes that a team of *The Hindu* reporters spoke to on Monday, in the wake of increasing speculation regarding the government stand on Olympic participation, were unanimous in their view that sportspersons should not be victimised.

Some of the current athletes were reluctant to be quoted though a bunch of international shooters said that it was unimaginable that politics could be brought into sport like this to perhaps deprive the best chance an athlete ever had.

A few stalwarts, though completely agreeing with the higher compensation demand of the Bhopal gas tragedy victims, cautioned that nothing would be a greater tragedy for the sportspersons than a boycott.

The views of the athletes:

Vijender Singh, World and Olympic bronze medallist boxer: It is up to the IOA to decide. But boycotting is not the way to lodge your protest. Each athlete prepares hard and dreams of the Olympics. This will be disheartening.

M.C. Mary Kom, five-time World champion woman boxer: Boycotting the Olympics is not good for the athletes. It will shatter their dreams of participating in the Olympics. Women's boxing is there in the Olympics for the first time and we are doing hard work. It will be very demoralizing.

P. T. Usha, fourth-place finisher in Los Angeles Olympics: It is years of hard work that brings you to an Olympics. You can't spoil a lifetime's dream by saying we won't participate. I had a medal chance in the 1986 Commonwealth Games. We were forced to return after reaching London because of India's boycott. Not many remember that. I never had a chance to compete in the Commonwealth Games after that. Athletes will stand with the country, but sports should not be mixed with other issues.

Gurbachan Singh Randhawa, Tokyo Olympics finalist in 110m hurdles: I am of the view that athletes should not be put under stress because of any uncertainty surrounding participation. On what issue are we talking of staying away from the Games? Then why are we spending so much of money towards the preparation? There should be a clear-cut statement from the Government that we plan to compete in the Games.

Anju George, World championship bronze medal-winning long jumper: Four years of sweat and toil would be wasted if we don't go. It would be the greatest injustice to the athletes. India is not a big power in sports and a boycott will not make an impact. Other athletes may not even know that there was a boycott. Don't make athletes victims of another tragedy.

Ajitpal Singh, captain of World hockey cup winning team of 1975: I feel bad for the victims of the gas tragedy. But why bring sports into it? I will feel equally bad for the sportsmen if there was a boycott and their careers come to an end. Players look for just the tag of an Olympian apart from winning a medal and they may not last till the next Olympics. The Government should take a firm stand. But not to participate will not be the right decision.

The disappointing performance of the Indian athletes and players in the Olympic, has made the people to think about the condition of sports in India. Despite our huge size in terms of population, we have not been able to leave our impact on international sports. Otherwise also Indian sports has not been able to achieve the standard which they were supposed to achieve.

Athletes have been much below the standard and since the Olympic games started India has been able to bag hardly a few gold medals. Moreover, most of the medals were bagged either by our Hockey team or by our wrestlers. Does it mean that the people in India have no interest in sports and games.

In fact it has been again and again pointed out that politics in the Sports Organizations of India has spoiled the sports. The selections are mostly based on favouritism and some of the outstanding sports persons are just ignored because they do not happen to be related to some influential person. Moreover, the sports bodies go on planning tours and matches fielding sub-standard sports person without thinking that the national pride will receive a serious setback in case we are unable to win. Some of the Ministers and the political leaders want to be at the helm

of affairs so that they may be able to embezzle sports funds. Under such circumstances, it is not possible to raise the standard of sports in India.

Another reason for the decline of sports in India is that we have been mostly concentrating upon the young people living in the cities. We have ignored the villagers, the tribal people and others. In fact those who live in the cities generally do not enjoy good health because of the polluted atmosphere and filthy environment. As they are brought up in the lap of luxury they cannot be hardily people. But in order to draw the attention of the villagers to sports we will have to have playgrounds as well as the facility for playing games in the villages.

Conclusion

The sports competitions should be given much publicity and should be organized on a grand scale. Similarly, some adventurous coaches should get hold of the tribal young people for importing training in the different fields of sports and games. Perhaps these people can participate in some of the sports events like long jumps, archery, high jumps and races in a more successful manner. Sports persons in India have to suffer because they are not given proper facilities. Sportspersons need very rich diet and also certain other conditions which may develop their talent properly. Some of the top sportsmen or women are given jobs in good firms but the sportspersons of the lower grade are completely ignored. When they retire from active sports they do not have anything to fall back upon. No financial help is given by any institution. This discourages the young people from taking part in sports. Above all sports facilities are not provided to the young children in big cities. They cannot play whichever game they like, only because they have to go to far off places for joining a club or a sports organization. There should be playgrounds in every colony and every child should have a free access to it. Moreover, competitions among them should be encouraged. It is better if some dynamic person should be given the duty of producing good sportsmen or women. Till we make a definite policy for developing sports in India, simple training and coaching will not help them. There should be free exchange of sportsmen and women so that they are able to learn something about the international standard. Sceptics will always dismiss any revolutionary idea. When Baron Coubertin persuaded a few countries to throw a javelin, did he know that one day, more than a century later; a blond mayor of London called Boris Johnson would aspire to become Prime Minister of a Great Power on the strength of his Olympic skills? A sneer is the privilege of a pessimist. The Congress is in obvious need of a strong dose of optimism. The Olympic spirit is in the air. It should breathe deeply.

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Research Innovations In Teacher Education

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ABSTRACT

Research and Innovations play an important role in improving the quality of teacher education at secondary stage. In such programmes efficient and good teachers are prepared who always try to introduce new ideas, techniques, and practices in classroom transaction, curricular or co-curricular activities. The National Policy on Education (NPE 1986, 92) also recognized that “Teachers should have the freedom to innovate, to devise appreciate methods of communication and activities relevant to the needs of and capabilities of and the concerns of the community”. The present paper traces the concept of Teacher Education and what are the research innovations are contributed to teacher education in India.

Introduction

In India, research innovative Teacher Education Programmes are organized by a variety of institutions spread all over the country. Some of these institutions and the National Council for Teacher Education (NCTE) are concerned with improving the quality of teacher education and use their control mechanisms as instruments for supporting and sustaining innovations. Yet many of such teacher education programmes are old and vague. They are just surviving with the same old techniques of quality controls rather than creating new transformation through innovations. Some of the issues related to quality of teacher education are old and are related to: ideology, financing, commercialization, management, infrastructure, reservations, quality control, updating curricular contents, admission, attendance, teaching, examinations, appointments, qualifications, and so on. But quality control may not be the same as creation of innovations.

“The goal of teacher education programmes must be aligned to prepare teachers as good persons, and not only as smart persons. How do we go about all these issues? The answer lies in creating an environment of being innovative.

Chattopadhyaya Commission notes, “If school teacher are expected to bring about a revolution in their approach to teaching... That same revolution must precede and find a place in the colleges of Education. The Commission further states that “If teacher education is to be made relevant to the roles and responsibilities of the New Teacher, the minimum length of training for secondary teacher should be five year following completion of class XII” Reiterating the need to enable general and professional education to be pursued concurrently”. The National Curriculum Framework (2005) also emphasized on innovations and good practices in teacher education.

No doubt, many research innovations have been conducted in the past particularly after independence which brought out significant changes and improvement in the field of teacher education at secondary stage. Some of the innovations are discussed in this present topic.

Innovative Programmes of Teacher Education:

During the post-independence era, the following teacher education programmes were conceptualized and launched. Some of them are continuing as they were, while some other have expanded and still some others have been discontinued. Twelve examples are given below:

- Four-Year Integrated Programme of Secondary Teacher Education, Kurukshetra University, Kurukshetra (1955).

- Four-Year Integrated Programme of Secondary Teacher Education, Regional Colleges of Education, NCERT (1963).
- Secondary Teacher Education Programme, Gandhi Vidyapeeth, Vedchchi, Gujarat (1968).
- Hoshangabad Science Teaching Programme (HSTP): Training Teacher, Ekalavya, Madhya Pradesh (1982).
- Pre-Primary Teacher Education: Mirambika, Sri Aurobindo Educational Society, New Delhi (1983).
- Need-based Teacher Education Programme, MP.
- B.C.Ed. Secondary Computer Teacher Education Programme, DAVV, Indore (1989).
- Activity-Based Secondary Teacher Education Programme, DAVV, Indore (1991).
- Four-Year Integrated Programme of Elementary Teacher Education, (B.El.Ed.), University of Delhi (1994).
- The 'Anweshana Experience': A participative Teacher Education Programme: B.Ed. Enriched, Department of Education, Banasthali Vidyapith, Rajasthan (1977).
- Comprehensive Teacher Education Programme: Gandhi Shikshan Bhawan, College of Education, Mumbai University, Mumbai (2000).
- Two-Year Extended Programme of Secondary Teacher Education in RIEs of NCERT.

Here we can discuss the some of the above innovative programmes:

Integrated Teacher Education Programmes:

The four year integrated programme was introduced during the 1960s in NCERT's four Regional Colleges of Education in Ajmer, Bhubaneswar, Mysore and Bhopal. Now Regional Colleges of Education are renamed as Regional Institutes of Education. This programme was designed to prepare Secondary School Teachers in the Sciences and Humanities. The Regional Institutes of Education (RIEs) of the NCERT have been offering B.A. /B.Sc. /B.Ed. and M.Sc. /Ed. Integrated programmes of Teacher Education. Also, a two-year B.Ed. programme. The Delhi University is offering 4-year integrated programme for Elementary Teachers (B.El.Ed.). Modular Integrated Teacher Education Programmes for Higher Education and Teacher Education Programmes on e-learning have also been formulated by some of the institutions.

Activity-Based Secondary Teacher Education DAVV, Indore:

This model has a long history. In this model, teaching is done by the student teachers instead of the teacher educators. Students collectively or individually prepare the topic and make theoretical or activity-based presentations. Teacher educators associated with this programme help the student teachers in identifying learning resources, learning the topic, preparing for presentations and post-presentation discussions. Students enjoy the initiative, activism and group work. This programme has been running for the last two decades. Its impact has been studied by Passi, Tyagi and Gupta (1992).

Activity-Based Elementary Teacher Education:

An Elementary Teacher Education Programme was launched in the District Institute of Education and Training (DIET), Daryaganj, Delhi, and is reported here as Launched-Wholes. The decision to launch Elementary Teacher Education Programme was taken by the DIET faculty. They introduced it as a self-managed and a self-resourced activity-based elementary teacher training programme.

The programme was launched on a voluntary basis. About two dozen volunteers joined the programme. A small "institution" in the institution was created by the principal and his faculty and the participating students collectively planned the programme and managed the same through participatory processes. The group worked like members of a well-knit family.

Personal and professional difficulties were shared mutually and solved collectively. One of the professional issues was related to the question – how can teachers be prepared for true teaching? Three guidelines of true teaching as envisioned by Sri Aurobindo were followed:

- The first principle is that nothing can be taught:
- The second principle is that mind is consulted in its own growth:

- The third principle is that education works from the near to the far, from what “is” to that which “should” be.

This kind of understanding became the basis of designing the activity-based teacher education.

Comprehensive Teacher Education Programme: Gandhi Shikshan Bhawan

Gandhi Shikshan Bhawan, an affiliated College of Education of Bombay University offers an integrated B.Ed degree programme for Secondary School Teacher since 2000. It provides first hand experience of a slum community. The main aim is to make student teachers aware of the socio-economic, cultural traditions of the poor and backward and its impact on the education and development of children. Teachers are educated to develop the conviction and the professional skills to help children come out of such adverse conditions

A Teacher Education Model Based on Brain Research:

Many philosophers and thinkers have suggested a large number of innovative programmes for teacher education. The list of such programmes is a big one. A few sample examples of teacher education programmes could be task-based teacher education, problem-based teacher education and so on. Likewise, Brain-Based education is proposed here for consideration to accept it as an innovative programme of education as well as that for teacher education.

The innovation of Brain-Based-Learning is proposed on the basis of new researches. In the light of learning society, this programme is proposed for capitalizing the natural abilities of the brain. New researches have found out a few interesting discoveries that brain-based-learning could be an excellent example for maximizing human development.

These researchers have found that brain has unlimited capacities. And the brain is always ready to learn through informal methods. The formal environment of teaching mismatches with the natural habits of the brain. The teacher education with informal-cum-formal environment may be more suitable for focused development of the mind.

The principle of Brain-Based Teacher Education are given below:-

- Brain is a parallel processor
- Learning engages the whole physiology
- Search for meaning is innate.
- Search for meaning is through patterning
- Emotions are critical for patterning
- Parts and wholes are processed simultaneously by the brain.
- Learning involves focused attention and peripheral perception.
- Learning involves both conscious and unconscious processes.
- We have two types of memory: spatial and rote
- We understand best when facts are embedded in the natural spatial memory.
- Learning is enhanced by challenge and inhibited by threat.
- Each brain is unique.

By way of conclusion, it can be stated that research innovations have brought significant improvement in the field of secondary teacher education stage. These should be conducted on continuous basis so that future challenges can be faced.

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Comparative Study of Body Composition, Flexibility and Muscular Endurance between Kabbadi & Kho-Kho Players

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Abstract

In the present modernized society the importance of sport is well understood and given a very high response. Body composition can be measured in several ways, through caliper to measure the thickness of subcutaneous fat multiple place on the body. These measurements are then used to estimate total body fat with a margin of error of approximately four % points. Flexibility is the range of motion around a joint, high flexibility helps in lowering the injuries in all stages of life. Muscular endurance is the ability of the muscles to continue to perform with out fatigue. The to continue to perform with out fatigue. The purpose of this present study was to compare the body composition (percentage of body fat), flexobility (hip & trunk flexibility), and muscular Endurance (sit-ups test) between college level Kabaddi & Kho-Kho Players. **Method:** Sixty(60) males participated at colleges level, Kabaddi Players (N=30) and Kho-Kho Players (N=30) rangin between 18 to 22 years were selected randomly from Hemchandrachary North Gujrat Uni.Patan affiliated to Colleges India for this study. To compare the mean differences between the college level Kabaddi & Kho-Kho Players, 't'-test was employed. **Result and Discussion:** Body composition (percentage of body fat), Flexibility (hip&trunk) and muscular endurance (sit-ups test) were found to be statistically significant. The mean and S.D between the Kabaddi & Kho-Kho Plyers for body composition are (11.40,1.92) and (14.43,2.82) respectively. Regard to flexibility the Mean and S.D. between the Volley ball & Kho-Kho Players are (23.32,5.48) and (17.10, 1.86) respectively Mean and S.D. between the Kabaddi =Kho-Kho Players regard to muscular endurance are (26.47, 4.87) and (17.23,2.71) respectively. Conclusion : it is concluded that there is a significant difference in body composition of Kabaddi & Kho-Kho Players. The trunk & hip flexibility of Kabaddi & Kho-Kho Players differ signifcantly. Further more lastly regard to muscular endureance difference.

Key words : body Fat, Flexibility, Muscular endurance, Body composition.

Introduction

In the present modernized societ the importance of sports is well understood and given a very high response. Research in sports sciences played an immense popularity due to Asian, world and Olmpic Game, these apart it has become a worldwide phenomeon. The physique or body composition, including the size, shape of the muscle, plays an important role in the sports. Body composition makes an important contribution to an individual's level if physical fitness performance, particularly in activities that required on to carry, one's body weight over distance, will be facilitated by large proportion of active tissue muscles in relation to a small proportion of inactive tissue 'fat' Body composition can be measured in several ways, through caliper to measure the thickness of subcutaneous fat in multiple places on the body. These measurements are then used to estimate total body fat with a margin of error of approximately four % points. Flexibility is the ability if an individual to move the body and its parts through as wide a range of motion as possible without undue strain to the articulations and muscle attachments. A high level of flexibility helps in saving energy during vigorous movement because of the full range of moment of the joint and muscles, the individual may be less prone to injury. Flexibility for sports is

more than the maximal lengthening of soft tissues and it is not a posed, static position. Flexibility is the range of motion around a joint, high flexibility helps in lowering the injuries in all stages of life. It is a very important component of sports performance that can be significantly improved if approached correctly. Muscular endurance also plays an important role in the performance of individuals in various sports and games. Muscular endurance is an important fitness component and helps individuals in performing high performance. Muscular endurance is the ability of the muscles to continue to perform without fatigue.

Method :

In this study, a sample of 60 male participants (30 Kabaddi and Kho-Kho 30 Players) who had participated at college level competition from Hemchandracharya North Gujarat University, Patan affiliated to Colleges India during the year 2011-2012 were randomly selected as subjects. The age was ranged from 18-22 years. To compare the mean difference between the Kabaddi & Kho-Kho Players with regard to body composition (% of body fat) were considered, and for hip & trunk flexibility (sit and Reach Test) was employed, and regard to muscular endurance (Sit-ups test for 30 sec) was considered. Body composition was assessed by taking the skin fold Caliper was used to assess percentage body fat. The Sit and Reach Test used to measure flexibility. Sit-ups test was employed to measure muscular endurance of the participants. 't'-test was employed. The level of significance was at 0.05.

Result : The below table from 1 to 3 shows the analysis of data.

Table-1

No	Body composition	No. of Subjects	Mean	SD	't' Value
1.	Kabaddi	30	11.4	1.92	10.33
2.	Kho-Kho	30	14.43	2.28	

't'-test for dependent samples marked difference are significant at $p < 0.05$

Body composition Results : The mean S.D. and t-test of the body composition between Kabaddi & Kho-Kho Players. Mean and S.D. between the Kabaddi & Kho-Kho Player are (11.4, 1.92) and (14.43, 2.28) respectively. The data clearly show that the Kabaddi Players are having less fat percent than the Kho-Kho Players, which is significant at ($p < 0.05$)

Table-2

No	Flexibility	No. of Subjects	Mean	SD	't' Value
1.	Kabaddi	30	23.32	5.48	8.58
2.	Kho-Kho	30	17.1	1.86	

't'-test for dependent samples marked difference are significant at $p < 0.05$

Flexibility (hip & trunk) Results : The mean, S.D. and t-test of the flexibility between Kabaddi & Kho-Kho Players. Mean and S.D. between the Kabaddi & Kho-Kho Players are (23.52, 5.48) and (17.10, 1.86) respectively. The data clearly shows that the Kabaddi Players are having greater flexibility than the Kho-Kho Players. Which is significant at ($p < 0.05$)

Table-3

No	Muscular Endurance	No. of Subjects	Mean	SD	't' Value
1.	Kabaddi	30	26.47	4.87	12.09
2.	Kho-Kho	30	17.23	2.71	

't'-test for dependent samples marked difference are significant at $p < 0.05$

Muscular Endurance Result : The mean, S.D. and t-test of the muscular endurance between Kabaddi & Kho-Kho Players. Mean and S.D. between the Kabaddi & Kho-Kho Players are (26.47, 4.87) and (17.23, 2.71) respectively. The data clearly shows that the Kabaddi are par excellent in muscular endurance (sit-ups test for 30 second) compare to the Kho-Kho Players. which is significant at ($p < 0.05$).

Discussion :

From the result of the study. the above tables showed that there was a significant difference in body composition between the Kabaddi & Kho-Kho Players. Regard to the flexibility (hip & trunk flexibility) between Kabaddi & Kho-Kho Players the data speak greater performance from the body builders. In case of flexibility which is an important for the Kabaddi & Kho-Kho Players respectively. Kabaddi Players need lot of strength, muscular endurance, and cardio-vascular endurance apart from flexibility, to compete against opponents on stage by displaying their muscles to the judges for the comparison. Kho-Kho Players also need lot of power, strength, speed, muscular endurance apart from flexibility to compete against their opponents. When exercising snatch & Jerk and clean & press the weight lifters need lot of skills, flexibility, power, speed, muscular endurance to perform well. From the analysis, it revealed that there is significant difference on body composition (percentage of body fat) between Kabaddi & Kho-Kho Players. Lastly both the groups regard to muscular endurance (sit-ups for 30 sec) differ significantly. The Kabaddi Players had shown greater performance compare to their counterparts Kho-Kho Players. Kabaddi regularly includes sit-ups exercises in their schedule, this is one of the reason that they had performed well in sit-ups test. Abdominals are the essence of Kabaddi game, that's the reason all the Kabaddi Players give lot of importance for abdominals. For weight lifters abdominals are not merely necessary as Kabaddi Players.

Conclusion :

It is concluded that there is a significant difference in body composition of Kabaddi & Kho-Kho Players. The trunk & hip flexibility of Kabaddi & Kho-Kho Players differ significantly. Further more regard to muscular endurance between both the groups showed significant difference, interestingly in overall comparison in all variables Kabaddi Players had shown par excellent performance.

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Physical Fitness Components Between Volleyball And Basketball Urban School Girls

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ABSTRACT

Sport is an activity that is governed by a set of rules or customs and often engaged in competitively. Sports commonly refer to activities where the physical capabilities of the competitor are the sole or primary determiner of the outcome [winning or losing], but the term is also used to include activities such as sports and motor sports where mental acuity or equipment quality are major factors. Sports are used as entertainment for the player and the viewer. It has also been proven by experiments that daily exercise increases mental strength and power to study.

Today, unfortunately, fewer and fewer students are experiencing that feeling. Many states have drastically reduced or, in some cases, even dropped Physical Education requirements for high school students. And, in some of those states where Physical Education has been deemphasized, fitness test results show an alarming rate of failure.

INTRODUCTION

Physical fitness is extremely important for the older population because as a person ages, there is a higher level of fatigue and often pain resulting from arthritis, low back problems, or other ailments. As these conditions worsen over time, many older people become more sedentary thinking that if they rest they will get better. On the contrary, when older people rest and become more inactive, they feel increasingly tired because they have decreased their physical fitness. Thus, it is a vicious cycle: disability and pain cause decreased movement, and decreased movement results in less fitness and a higher level of dysfunction. A good physical fitness level—regardless of the disability—helps older people maintain their quality of life and can reduce their dependence on others to help with activities of daily living such as climbing stairs, bathing, and doing housework.

A moderate to high level of fitness reduces the incidence of “hypo Kinetic” diseases. Hypo kinetic basically means a lack of movement or too little movement. When the body doesn’t move enough, it slowly deteriorates and becomes vulnerable to disease. In essence, a sedentary lifestyle can contribute to or increase the severity of such problems as hypertension [high blood pressure], obesity [excess fat], adult-onset diabetes, osteoporosis [brittle bones], depression, and low back pain. Individuals who are poorly fit often end up with one or more of these conditions, which impairs the individual’s quality of life.

Exercise also helps keep fat from setting on kids, improving health and making movement easier

METHODOLOGY

In this chapter, the selection of subjects, tester reliability, instrument reliability, orientation of the subjects, research design, criterion measures, administration of test, construction of training schedule and statistical techniques adopted for the analysis of data have been described.

Selection of Subjects

For the purpose of the study 30 subjects, age ranging between 9-12 years from Sivananda School was selected. They were further divided into experimental and control group randomly after the preliminary tests taken for the study. All students in this institution had identical and controlled living condition with variation in socio-economic background. The investigator was well acquainted with the subjects being a student himself in the same institution. This institution being a fully residential institution this study was planned out as they could be taken into confidence and control. Prior to the administration of further procedures a series of meetings was held with subjects they were made clear about the objectives and purpose of the study. Testing and training procedures were also explained to them in details. They were requested to co-operate and participate actively for the same. After the pre-test condition they were randomly distributed to experimental and control group of fifteen each.

SELECTION OF SUBJECT

Selection of Variables

The research scholar reviewed the available scientific literature pertaining to the problem from books, Journals, magazines, websites, research papers was the consideration of feasibility on criteria and availability. The following variables were selected:

Physical Fitness Variables

50-yard dash, Sit-up, Shuttle run, Standing Broad Jump, Flexibility

Experiment Design

The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects [n=30] were randomly assigned to two equal groups of fifteen men students each. The groups were assigned as experiment group [EG] control group [CG] in an equivalent manner. The experiment group participated in the aerobic circuit training for a period of six weeks. The post-tests were conducted on the above said variables. The training programme was scheduled at 6.30 to 7.30 am for three days in a week.

Testers Reliability

To ensure that the investigator was well versed in the technique of conducting the test, the investigator had a number of practice sessions in the teaching procedure. All the measurement were taken by the investigator with the assistance of person well acquainted with tests and their procedures. Tester competency and reliability of test were established by test, retest process. A very high correlation was obtained, the tester competency in taking measurement and test reliability were accepted.

Table 1

CORRELATION COEFFICIENT VALUES

S.No	Test items	Co-efficient Of Correlation
1	Speed	0.98
2	Sit and Reach test	0.95
3	Sit-ups	0.91
4	Shuttle run	0.97
5	Leg explosive power	0.98

Conclusions

The conclusion arrived clearly states that the Urban Football High School Girls had better performance in sit-ups, Shuttle run, and Pull-ups than Urban High School Girls.

The conclusion arrived clearly that the urban Volleyball High School Girls had better performance in 50 yard dash, Standing Broad Jump Urban High School Girls

Based on the findings of the study, the district authorities concerned may take necessary steps to improve the specific components of physical fitness in which the students are weak.

Physical training may be given separately for the rural and urban students to develop their physical fitness. Proper physical fitness programme may be designed and implemented for the rural and urban students to improve their physical capabilities.

Sports Facilities In South Central Railways A Comprehensive Study

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Introduction

In recent years there has been a rapid growth and development in the Sports field. Society has recognized the importance of the sports allot, All societies have shown concerns regarding the patterns of recreational activities, including sports, pursued by their members. In fact societies provide a socio-cultural context within which games and sports are to be carried on. Sport is used not only at the community level to develop social integration locally but also at the national and *international* levels to demonstrate national supremacy in ideology and economic sufficiency.

Sports serve vital social and cultural functions. Sports contribute towards the overall welfare of the human society. Sports help in the overall development of human personality. Sports provide ample and healthy means for recreation and relaxation of human mind and body. Sports are effective for rehabilitation and adjustment of the injured sick and handicapped. Sports provide opportunities for social interaction thereby fostering peace and understanding among different people, races and religions etc. Sports perform preventive and curative function for several diseases and ailments inflicting human body and mind. Sports provide healthy and socially acceptable opportunities for the people and nations to compete against each other thereby touching heights of excellence of human endeavor and attainment. Sports have been used as one of the important means of pleasure throughout the life such a great event has been introduced and implementing at grand level in Indian railways. South Central Railway is one of the biggest Railway zone in Indian Railways. There are 86207 employees working in SC Rly. It was established on 02 – 10 – 1896 and it's headquarter is at Secunderabad of Andhra Pradesh state. It was sub divided in to six Divisions and three major units viz..Vijayawada, Guntakal, Guntur, Hyderabad, Nandhed, Secunderabad, and Headquarters, Railway protection force, Workshops.

METHODOLOGY

The researcher has prepared the questionnaire covering all the details pertaining to the study and send to all the Divisions in the South Central Railway, Collected data from the relevant sources of six divisions and three major units. And scholar interviewed the assistant sports officers and relevant sports persons personally pertaining to this study. The collected data was tabulated and analyzed accordingly.

SIGNIFICANCE OF THE STUDY

The study may throw light on the existing sports facilities such as sports staff, play fields, finance and equipment at various Divisions in the South Central Railway.

The study may give information regarding the sports facilities available in South Central Railway in order to emphasize the importance of definite and thorough programs of sports activities. This study will help to design as well planned Sports programs for the Railway Employes in the light of the information gathered.

This study may help in motivating the Railway employees to improve their standards in the field of sports and games.

It helps to point out how best the Railway talent in sports and games can be identified and utilized.

It would help to find out whether the facilities including finance and expertise provided were adequate and were meeting the Railway employees' requirement.

Objectives

There should be adequate sports facilities in south central Railway.

There should be sufficient coaches in SC Railway.

There should be sufficient infrastructure required in SC Railway.

RESULTS, DISCUSSION AND ANALYSIS

The Railway recreation club (RRC) grounds site near by the Rail Nilayam at Secundrabad, a beautiful International standard sports complex has built. There are provisions to conduct the international matches of any sports. The cricket stadium is one of the best constructed which has accommodation for 6000 spectators. It consists international standard pavilion, office, computer room, pressroom, and VIP lounge and an international standard swimming pool an athletics stadium, velodrome, sports hostel are existing.

The RRC has a Hockey stadium, football ground, basketball court, volley ball court, and lawn tennis with facilities available. In addition to this there will also be a multipurpose Indore stadium. The building is in double floors with all the international standard facilities and spacious press room. The admission and practices facilities' at this sports complex is restricted to employees and their children only. Entire the sports management look after by the South Central Railway Sports Association.

Sportsmen are recruited in sports quota through talent test and scouting for 30 recognized games. There are 20 qualified NIS coaches, 3 woman coaches among them are available in South Central Railway. There are 5 stadiums, 4 swimming pools, 19 shuttle courts, 5 food ball fields, 1 cricket stadium, 5 outdoor stadiums, 10 kabaddi courts, 1 Hockey field, 31 Volley ball courts, 11 Tennis courts and 15 billiards. All the sportsmen will be given Kit allowances like kit, daily allowance, diet, refreshment, etc.. Increments and intensives also will be offered on the good performance.

Special casual leaves are given during the coaching camps and participation period. The expenditure made by the SC railway during the last five financial year's i.e from 2005-06 to 2009-10 on the sports head. In the 2005-06 year by the SC railways was Rs. 71, 36,417/- and gradually the amount is increased year by year and during the year 2009-10 it rose to Rs/- 30559486/-

POSITIONS IN KAUL GOLD CUP

FIRST THREE POSITIONS IN KAUL GOLD CUP				
2005-06 (63 Points)	2006-07 (76 Points)	2007-08 (84.5 Points)	2008-09 (67.5 Points)	2009-10 (67.5 Points)
FIRST POSITION				
Kabaddi(Men)	Hockey(Men)	Ball badminton (Men)	Cricket(Woman)	Golf
Cycling	Ball badminton (Men)	Billiards	Tennis (Men)	Kabaddi (Women)
--	Basketball (Men)	Kabaddi (Woman)	9 Ball Pool (Men)	Shuttle Badminton (Men)
--	Tennis (Men)	Volley Ball(Men) &Gymnastics (Men)	Kabaddi (Women)	Billiards
SECOND POSITION				
Boxing	Kabaddi (Women)	Kabaddi (Men)	Ball badminton (Men)	Handball (Men)
Billiards (Men)	Volley Ball(Men)	Cycling (Men)	Hockey(Men)	Tennis (Men)
Volley Ball(Men)	Shuttle Badminton (Men)	Tennis (Men)	Volley Ball(Men)	Cricket(Women)
Kho –Kho (Men)	Kho –Kho (Men)	Kho –Kho (Men)	Kho –Kho (Men)	--

	Gymnastics (Men)	Handball (Men)& 9 Ball Pool (Men)	Gymnastics (Joint Runners)	--
THIRD POSITION				
Ball badminton (Men)	Billiards (Men)	Cross Country (Women)	Body Building	Kabaddi(Men)
Basket ball (Men)	--	Hockey(Men)	Golf	Basketball (Men)
Cricket (Women)	--	Snookers (Men)	Snookers (Men)	Ball badminton (Men)
Hockey(Men)	--	Shuttle Badminton (Men)	Handball (Men)	Hockey(Men)
Kabaddi (Women)	--	--	--	Gymnastics (Men)
Shuttle Badminton (Men)	--	--	--	Kho –Kho (Men)
Gymnastics (Men)	--	--	--	--

Table shows the points won by the south central railways in various Games and Sports during the five years period from 2005 to 2009 in KAUL GOLD CUP. Above Figure shows the performance of south central railways in various Games and Sports during the five years period from 2005 to 2009 in KAUL GOLD CUP.

RECOMMENDATIONS

Free and open areas in all the Railway divisions may be utilized for sports & games and recreation activities.

Newly formed divisions may be provided facilities for all the Games and Sports as early as possible.

Track & fields, indoor stadiums, swimming pools, Golf, sports academies may be provided to all the divisions.

Qualified NIS coaches may be recruited in all the divisions for all the games.

Woman coaches may be recruited in the divisions for all the games.

Sports academies may be arranged in all the division and units.

Talented Sports men may be selected from Railway schools and colleges and they may be given admissions in academies, and farther employment may be provided in South Central Railway in all the divisions.

Some more popular and new games may be recognized and introduced in the South Central Railway and sportsmen may be recruited for such games.

Synthetic surfaces may be arranged for the games like Hockey, Tennis, Athletic Tracks, etc.

More indoor stadiums may be constructed in all the Railway divisions.

Daises and galleries may be constructed at each and every play fields and courts to perform opening and closing ceremonies properly and for good glance.

Toilets and bathroom facilities may be provided at each and every play fields and courts.

Sports facilities may be extended in all the Railway divisions.

Seminars and workshoAps may be organized on sports every year at Railway zonal and inter zonal level.

Available SAI and SAAP Coaches services may be utilized at all the divisions in the SC Railway.

There should be separate sports clubs for woman employees.

Comparative Study of Eating Disorder in Professional, Academic and Selected Sports Males

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Abstract

The purpose of this study was to compare of eating disorder in professional, academic and selected sports male personality in Vadodara district (Gujarat). 60 boys studying in professional course, 60 boys studying in academic course and 60 selected sports personality were selected randomly from different colleges of Vadodara district for the purpose of study. The age group was between 15 to 25 years. Questionnaire method was employed to collect the relevant data. The criterion measure for testing the hypothesis in this study was the scores obtained in the eating disorder questionnaire. Scholar circulated the questionnaire to the subjects of various categories then he explained the purpose and description of the questionnaire. To find out the comparison of eating disorder in boys of professional course, academic course and selected sports personality "M" test (one way analysis of variance) was applied in statistical procedure. Comparing the entire groups mean we find that there is significant difference between academic mean (26.16) and selected sports male personality mean (26.56) while there is high significant differences in professional mean (29.22) compared to academic and selected sports male personality. Therefore we can say that there is a high eating disorder problem in professional group in comparison of other two groups' i.e. academic and selected sports male personality. Data found from the LSD after comparing the mean of the three groups it was found that, the LSD of academic and selected sports male personality is less significant but when professional group mean was compared with academic and selected sports male personality group a very high significant difference was found. From this we found that the percentage of eating disorder is very high in professional group compared to academic and selected sports male personality group in Vadodara.

Key words: Anorexia nervosa, bulimia nervosa, stress.

Introduction

Eating disorder means Anorexia Nervosa and Bulimia Nervosa. Eating disorders include extreme attitudes, emotions and behaviors surrounding both food and weight issues. They include anorexia nervosa, bulimia nervosa, and binge eating disorder. All are serious emotional and physical problems that can have devastating effects and life-threatening consequences. Eating disorders affect both men and women. While eating disorders are less common in men, approximately 10% of those suffering from eating disorders are male (Wolf, 1991). Studies also demonstrate that cultural and media pressures on men for the "ideal body" are the rise. This increased focus on body shape, size and physical appearance will likely contribute to increased numbers of eating disorder in males. Research indicates that eating disorders in males are clinically similar to eating disorders in females (Schneider & Argas, 1987).

Other studies have found that men with eating disorders tend to have more passive-aggressive personality styles and have had negative reactions to their bodies from their peers while growing up. Research also indicates that anorexic males tend to have more dependent and avoidant personalities. Males with anorexia do not tend conform to the cultural expectations for masculinity such as: to be competitiveness, muscularity/strength, physical aggressiveness, independence and competence in athletics (Kearney-Cooke & Steichen-Asch, 1990).

Anorexia Nervosa in Males: Anorexia is a life-threatening disorder that is characterized by self-starvation and excessive weight loss.

Bulimia Nervosa is characterized by a highly secretive cycle of binge eating followed by purging. Bulimia includes eating large amounts of food (more than most people would eat in a meal) in a short period, then getting rid of the food and calories through vomiting, excessive exercise, or laxative abuse.

Anorexia nervosa literally means 'loss of appetite through nervous reasons' and Bulimia Nervosa is characterized by compulsive binge eating, accompanied by self-induced vomiting, period of starvation and excessive exercise, and purging with laxative to avoid weight gain and alleviate guilt. Most men in the western world have a distorted body image, perceiving themselves to be fatter than they really are. Many consequently spend a lifetime in pursuit of a leaner, lighter body. While some resort to the drastic measure of cosmetic surgery, most choose to focus on exercise and food intake. However, diet lead to an obsessive preoccupation with weight and calories, and eventually influence on eating disordered eating. The media may be a significant influence on eating disorders through its impact on values, norms and image standards accepted by modern society. Both, societies' exposure to media and eating disorders have grown immensely over the past decade. Researchers and clinicians are concerned about the relationship between these two phenomena and finding ways to reduce the negative influence that thin-ideal media has on men's body perception and susceptibility to eating disorders. The dieting industry makes billions of dollars each year because consumers continually buying products in an effort to be the ideal weight. Hollywood displays an unrealistic standard of beauty that makes the public feel incredibly inadequate and dissatisfied and forces people to strive for an unattainable appearance.

Research from a family systems perspective indicates that eating disorders stem from both the adolescent's difficulty in separating from over-controlling parents, and disturbed patterns of communication. When parents are critical and unaffectionate, their children are more prone to becoming self-destructive and self-critical, and have difficulty in developing the skill to engage in self-care giving behaviors. Such developmental failures in early relationships with others, particularly maternal empathy, impairs the development of an internal sense of self and leads to over-dependence on the environment. When coping strategies have not been developed in the family system, food and drugs serve as a substitute. There is no one cause of eating disorders because many things contribute to them. If you have low self-esteem, that can be a big contribution. Some other causes of these disorders could simply be feeling helpless, using it as a way to handle stress and concerns, or just wanting to have control something in your life. For other people, the main cause might be just being fearful of becoming over weight. But some people do not have much of a choice when it comes to eating disorders, because genetics play a big part. If an eating disorders runs in your family, then that may also be a main cause. In some families the parents is concerned about his son's weight, and that concern can lead to the child becoming over concerned as well, which then can lead to an eating disorder. Also in families, sometimes the father make comments or suggestions having to do with the son's weight, which can then make his wish to look as thin as he can so that the rest of his family is satisfied.

Methodology

60 boys studying in each of professional and academic course and 60 sports personality were selected randomly from different college of Vadodara district for the purpose of the study. The age group was between 15 to 25 years. Questionnaire methods were employed to collect the relevant data. The criterion measure for testing the hypothesis in this study was, the scores obtained in the eating disorder questionnaire to the subjects of various categories then he explained, purpose and description of the questionnaire of eating disorder. Then he took consent of the subjects to fill-up questionnaire, subjects were ensured that the responses given by them would strictly keep confidential and would not be revealed to anyone. Subjects were in college during free time together all the subjects in sufficient place and then explained the purpose of the study. Research scholar distributed questionnaire and dictate subjects to understand about what they were exactly required to read instructions and directions. There was no right or wrong answers. There was no time limit to complete questionnaire but subjects were instructed to tick the right column they felt about the question. All the subjects were instructed to respond independently.

Statistics

To find out the comparison of eating disorder in boys of professional course, academic course and selected sports personality "M" test (one way analysis of variance) was applied in statistical procedure.

Table 1. Mean score of eating disorder checklist in professional, academic and selected sports male personality

Group	Professional	Academic	Selected Sports male personality
Mean	29.22	26.16	26.56

Table 2. Analysis of variance of the mean for three groups in eating disorder

SV	DF	SS	MSS	M ratio
Between groups	2	28734.02	15816.02	21.37*
Within groups	222	156548.86	673.10	

*Significant at 5% level of confidence

Table 3. Comparison of means of three groups

Professional	Academic	Selected sports male personality	CD
29.22	26.16	26.56	13.53

Result and discussion:

Mean values of eating disorder in professional, academic and selected sports male personality are shown in Table 1. Comparing the difference between academic mean (26.16) and selected sports male personality mean (26.56) while there is high significant differences in professional mean (29.22) compared to academic and selected sports male personality (Table 2 \$ 3). Therefore we can say that there is high eating disorder problem in professional group in comparison of other two groups' i.e. academic and selected sports male_personality is less significant but when professional group mean was compared with academic and selected sports male personality group a very high significant difference was found. From this we found that the percentage of eating disorder is very high in professional group compared to academic and selected sports male personality group in Vadodara. The hypothesis professional, academic and selected sports male players in eating disorder stated earlier in the study were accepted.

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Sports Training

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Introduction:

The importance of motor fitness of its citizens is well recognized by most of the nations of the world. Many nations have their unique schemes of promoting and monitoring physical fitness of its citizens in a systematic way. If the United States, the President's Council of Physical Fitness and Sports [1958] sponsors National Conferences on physical fitness, circular promotions and pamphlets, conduct clinics for various segments of population and administers the scheme of awards for youth on the basis of performing creditable in AAPHER youth fitness test or on the basis of stipulated minimum participation records in various sports.

Objective of motor fitness as an important quality to be developed and implied in the field of modern physical education Kraus and Weber during World War II brought glaringly the significance and importance of physical fitness. Almost every nation in the world attaches great importance to the development of physical fitness and sports in order to improve the nation's health and for the well-being of the future generation. Hence, a large number of governmental and Para-governmental organizations in close collaboration with private bodies administer and supervise the development of these programmes and sports. Certain nations like G.B.R. and U.S.S.R. every try to project the superiority of their political ideology and their political and social systems through achievements in the field of sports. The increased number of athletes (sportsman) participating in the great quadrennial sports festival, and the Olympic games from all over the world is also an indication of the popularity and development of sports. Further more the non-ending creation of new records shows that continuous upward trend and improvements in the standard of physical fitness and sports performance. The acquisition of new standards may be attributed to better understanding of human organization in relation to physical and motor performance qualities that underlie success in any sports endeavor besides intensive research in the areas of human fitness, sports, physiology, sports medicine, training methods, nutrition to many other areas related and specific sports.

A scheme of Nation physical efficiency drive was launched in India, which has been designated Nation physical fitness programme (NPEP 1959) national physical fitness test battery consisting of Non-Athletic items minimizing the requirements of facilities and equipments which are difficult to produce in rural areas where standardized with tables of norms for different age groups and sexes. Each state organizes testing programmes in various communities and selects those who merit one, two or three "star" awards. Each state/union territory is expected to recommend from among the three star winners. The names of the four top scorers in each of the three categories of men, seniors, juniors and sub-juniors. Thus only twenty four best candidates from each state/ union territory can participate in the competitions. Those who win the nation award are also eligible for scholarship of Rs.1200/- for one year in addition there are some special athletic events included in the N.P.E.P. for providing added incentive of all age groups.

Recognizing the facts the poor performance of Indian national teams at the International level is essential due to poor standard of physical fitness. The Nethaji Subhash national Institute of sports which has responsibility of preparing national teams in cooperation with various federations has adopted the methods of association experts in their coaching schemes. A system

of monitoring the physical fitness of national level players on the criteria of norms in a physical fitness test battery is also formulated.

Though it is virtually impossible to obtain complete conscience of opinion with regard to the understanding of physical fitness attempts were made by some physical educationists to find out the physical fitness differences between individuals as well as between different teams sports, and also the relationship between physical growth and scholastic achievement. Some of these studies reveals the difference between individuals engaged in the same activity and also the relationship between physical fitness achievements.

Physical fitness:

"fitness is a capacity of the individual to live and function effectively, purposefully and zestfully have and now and to meet confidentially the problems and crises which are among life's expectations", Karpovich defines physical fitness as "A fitness to persons some specified task requiring muscular effort"

Motor fitness:

Motor fitness is defined by the Clarke as the ability to carry out daily task with vigor and alertness, without undue fatigue and ample energy to enjoy leisure time pursuit and to meet unusual situation and unforeseen emergencies. It is defined as the ability to perform fundamental motor skills involving physical fitness traits such as power, agility, speed and balance.

Motor performance: Motor performance can be defined as the capacity to perform Motor Skills such as speed, endurance and strength in an efficient manner.

Motor performance qualities makes up the majority of the motor performance test pattern include speed, power, agility, reaction time, hand eye, coordination and balance.

Speed: It is the ability to perform a particular movement very rapidly it is the function of distance on time. Speed is defined as "The capacity of individual to perform successive movements of the same pattern at a faster rate".

Cardio- vascular Endurance: Cardio- vascular Endurance is the ability of the heart, lungs and circulatory system to supply oxygen and nutrients to work muscles efficiently. Cardio vascular endurance is defined "As the capacity to persist in strenuous tasks for some length of time.

Strength Endurances:

Strength endurance is defined as "The force that a muscle or a group of muscle can exert against a resistance for a prolonged period. Strength is defined as the capacity to exert force or the ability to do work against resistance. Muscular endurance is the ability of the muscle to carry out the work for longer duration.

Agility:

Agility is the ability to move quickly and change directions while maintaining control and balance. Agility is a combination of speed, balance, power and co-ordination.

Conclusion

A knowledge of growth patterns and motor performance at different age levels form individuals to indicate and the influences of environment and habitation will facilitate a basis for understanding the individuals growth and motor performance.

More over in our country trained physical education teachers are not appointed in every school. Therefore, it becomes very difficult for the general teachers who do have adequate knowledge in the field of Physical education to plan scientific programmes according to the needs of the individual. Proper activities which suitable to the age level are essential for the proper development thus the present study will be significant in the following ways.

1. The result of the study will be helpful to compare the motor fitness components of players of different disciplines.
2. The findings of the study will add to the quantity of knowledge in physical education especially in the area of motor fitness.
3. It may be helpful for physical education teacher and coaches in various sports to find the best talents for the future prospects.
4. The result of the study would provide an additional knowledge in the area of research.
5. The same study may be considered for high school girls as well as for different age groups.
6. The result of the study will bring to light whether the motor fitness components are necessary or not.
7. This may be used as a literature in the field of physical education.

A Study Of Sports Training Methods

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Introduction:

In the light of the meaning and definitions of sports training, the aim of sports training is to improve rapidly the sports performance of a sportsperson particularly in sports competitions, which is mainly based on his physical, psychological, intellectual and technical capacities and capabilities. In other words, the aim of sports training in competitive sports is to prepare the sportspersons for the attainment of highest possible sports performance in competition.

Objectives of sports training

Keeping in view the aim of sports training in competitive sports, the following objectives of sports training may be set to reach the aim.

Personality development, Physical fitness development, Skill/Technique development, Tactical development and Mental training

Mental Training

Mental training is an integral and important part of sports training. Now a day, in the hi-tech competitive era higher demands are put on the mental faculties of sportspersons. They are under tremendous stress and pressure both internal and external. The sportspersons must be able to act and think for themselves during sports training and also in competition to perform better. This is an important objective of sports training to develop and train the sportsperson's intellectual faculties and improve their knowledge of sports training and learn its application in a unique way in training and competition.

Sports training characteristics

Main characteristics of sports training are as follows:-

- Sports training is performance oriented
- Sports training is individual matter
- Sports training is planned and systematic
- Sports training is scientific process
- Sports training is educational process
- Coach as a leader/Mentor in Sports training
- Development and exploitation of reserves of sportsperson.
- Sports training is controlled process

Sports training Principles

- Principle of overload
- Principle of individuality
- Progressive development
- Principle of specificity
- Principle of continuity
- Principle of active participation
- Principle of variety
- Principle of periodisation

Various sports training methods

The basic components of physical fitness such as endurance, strength, speed and flexibility can be developed through different training methods that are described briefly as under but one must also know about the basics of related factor/elements.

Continuous Training method, Interval training methods, Repetition method, Competitive and trials methods, Circuit training method, Fartlek training method, Weight training method, Plyometric training method

Endurance

The objective of endurance training is to develop the energy productions system(s) to meet the demands of the event. Endurance can be developed using continuous and interval running.

Type of endurance

Anaerobic endurance, Aerobic endurance, Speed endurance and Strength endurance

Exercises

The following are some examples of circuit exercises

- **Arm:** Press ups, Bench dips, Pull ups
- **Abdominals:** Sit ups (lower abdominals), Stomach crunch (upper abdominals)
- **Lower Back:** Back extension chest raise
- **Legs:** Squat jumps, Compass jumps, Astride jumps, Step ups
- **Arms and legs:** Burpees, Treadmills, Squat thrusts, skipping

Strength development

- **Maximum strength can be developed with**
 - Weight training
- **Explosive strength can be developed with**
- Conditioning exercises, Medicine ball exercises, Plyometric exercises, Weight training
- **Strength endurance can be developed with**

Circuit training, Dumbbell exercise, Weight training, Hill running

Development of speed

The technique of sprinting must be rehearsed at slow speeds and then transferred to runs at maximum speed. The stimulation, excitation and correct firing order of the motor units, composed of a motor nerve (Neuron) and the group of muscles that it supplies, makes it possible for high frequency movement to occur. The whole process is not totally clear but the complex coordination and timing of the motor units and muscles most certainly must be rehearsed at high speeds to implant the correct patterns.

- Flexibility is developed and maintained all year round
- Strength and speed is developed in parallel
- Skill development (technique) is pre-learned, rehearsed and perfected before it is done at high-speed levels.
- Speed training is developed by using high velocity for brief intervals. This will ultimately bring into play the correct neuromuscular pathways and energy sources used.

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Effect Of Interval Running And Swimming Activities On High Density Lipoproteins And Muscular Endurance

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Abstract

The purpose of the study was to find out the effect of interval running and swimming activities on selected biochemical variables. Thirty male teachers aged between 35 and 40 years who knows swimming were selected for the study. They were divided into three equal groups, each group consisted of ten subjects in which Group I underwent interval running activity and group II underwent interval swimming activity, three days per week for twelve weeks and group III acted as control, who did not participate in any training. The subjects were tested on selected criterion variables such as high-density lipoprotein and muscular endurance, at prior to and immediately after the training period. The selected criterion variables, such as, high density lipoproteins and muscular endurance were assessed by using Boehringer Mannheim kit method and sit-ups test. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental groups and control group on selected criterion variables separately. Since, there were three groups involved in the present study, the Scheffé S was used as post-hoc test. The results of the study showed that the selected criterion variables such as high-density lipoprotein was increased and muscular endurance was improved significantly after the training periods for both the training groups, when compared with the control group. Moreover, the result of the study also shown that there was no significant difference was occurred between the training groups on selected criterion variables such as, high density lipoproteins and muscular endurance.

INTRODUCTION

Training means preparing for something: an event a season, an athletic competition, a nursing career, an operatic performance, or military combat. Much growth and change occur during training. It usually involves learning or polishing skills, exchanging attitudes and developing and strengthening organs and their functions. When we train, we have something in mind; a goal, a level of competence, a performance of some kind. An aspiration is established in our mind, which we systematically pursue. We get prepared to meet the increasing demands of some kind with respect to our current mental or physical resources. We seek, in some way, to change and better our present status, to improve on our previous level of performance.

The interval training in which bouts of hard running or work are separated by periods of light exercise with no pause for rest. Interval training involves intense exercise interspersed with intervals of relatively light exercise. To improve cardio respiratory functioning, strenuous intervals should be allowed at near-maximum heart rate intensity. This form of training usually results in a greater buildup of lactate, accompanied by greater pain and discomfort. However, since the overload principle is applied-that is, the length or intensity of intervals can be increased-great improvement in fitness can occur in a short period of time.

At swim smooth we know the secret of freestyle breathing. The secret is good exhalation. Whenever our face is in the water, exhale constantly and smoothly. When we are swimming we should always be exhaling except when we turn our head to inhale. We can exhale through our mouth or through our nose or through both, it doesn't matter. But when our face is in the water we should be exhaling all the time in one constant stream of bubbles.

As lipids are insoluble, cholesterol cannot be carried in the blood in its original form. It has to be carried by protein molecules called lipoproteins, in which cholesterol is encompassed and carried to and away from the tissues. There are four types of lipoproteins; based on their density they are named High-Density Lipoprotein (HDL), Low-Density Lipoprotein (LDL), Very Low-Density Lipoprotein (VLDL) and Chylomicrons.

Muscular endurance is very important for people playing sports and who have to sustain an activity for long periods of time. Muscular endurance is determined by how well the slow twitch muscle fibers are developed.

Methodology

The purpose of the study was to find out the effect of interval running and swimming activities on selected biochemical variables. To achieve this purpose of the study, thirty male teachers aged between 35 and 40 years who knows swimming were contacted and randomly selected as subjects. They were divided into three equal groups, each group consisted of ten subjects in which Group I underwent running activity and group II underwent swimming activity three days per week for twelve weeks and group III acted as control, who did not participate in any training. The subjects were tested on selected criterion variables such as high-density lipoprotein and muscular endurance at prior to and immediately after the training period. The selected criterion variables such as high-density lipoprotein and muscular endurance were measured by Boehringer Mannheim kit method and sit-ups test. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental groups 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 three groups were involved in the present study, the Scheffé S test was used as post-hoc test to find out which of the paired mean was significantly differ.

Cooper test was administered for both interval running and swimming activity groups to find out their maximum performance. For the running group, the initial load was fixed individually in accordance with their maximum distance covered in 12 minutes. For swimmers, the distance covered in 12 minutes was recorded and converted into swimming distance as recommended by Fox and Mathews. The training distance of swimming group was found to be one fourth of their running distance in 12 minutes. During the initial week, the warming up period and warming down period was fixed as nine and six minutes respectively for running activity and swimming activity groups and it has increased half a minute in each week from the second week to twelfth week for both the groups.

Training Programme for Running Group

Interval training programme is designed individually on the basis of the initial Cooper test performance (initial load fixed on 55 % of individual initial performance). From the I week to the VI week running distance intensity increased from 55 % to 80 % each individual could complete their stipulated distance within 12 minutes with two repetitions with a rest of 8 minutes between repetitions. After completion of the VI week the load intensity was constant up to twelfth week, but the over load principle adopted through decrease the rest period. For the VII and the VIII week rest period in between repetition was 7 minutes, for the IX and the X week the rest between repetitions was reduced to 6 minutes, and the XI and the XII week rest given was only in 5 minutes.

Training programme for Swimming Group

Interval training programme was constituted individually on the basis of their initial cooper test performance. Swimming distance was calculated by converting their running distance into swimming distance on the basis of Fox formula: $\frac{1}{4}$ of running distance is equal to swimming distance (i.e. if a person runs 200 mts it treated on a par with the swimming distance of 50 mts.). Initial load fixed on the 55 % of each individuals Cooper test performance for swimmers converted swimming distance. From I week to VI week swimming distance intensity was raised from 55 % to 80 %. Each individual could complete the stipulated distance within 12 minutes with two repetitions with a rest period of 8 minutes between repetitions. After completing the VI week training, the load intensity was constant up to twelfth week (80 %). But the overload principle adopted through decrease the recovery period. For the VII and the VIII week recovery period in between repetition was 7 minutes, IX and X week recovery period in between repetition was 6.5 minutes and XI and XII recovery period in between repetition was 6 minutes.

Table - I

Analysis of Covariance and 'F' ratio on High Density Lipoproteins and Muscular Endurance for Running Activity, Swimming Activity and Control Groups

Variable Name	Group Name	Running Activity Group	Swimming Activity Group	Control Group	'F' Ratio
High Density Lipoproteins (mg/dl)	Pre-test Mean \pm S.D	45.20 \pm 3.084	46.00 \pm 3.712	43.70 \pm 2.312	1.428
	Post-test Mean \pm S.D.	49.90 \pm 3.143	50.30 \pm 2.710	42.90 \pm 2.283	23.162*
	Adj. Post-test Mean	49.710	49.458	43.932	82.298*
Muscular Endurance (Nos./min)	Pre-test Mean \pm S.D	20.40 \pm 1.713	20.40 \pm 1.578	19.70 \pm 1.567	0.622
	Post-test Mean \pm S.D.	22.20 \pm 2.15	21.80 \pm 1.619	18.60 \pm 2.633	8.238*
	Adj. Post-test Mean	21.951	21.551	19.099	13.038*

* Significant at .05 level of confidence. (Table value required for significant at .05 level of confidence with df 2 and 27 and 2 and 26 are 3.35 and 3.37).

Table - II

Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Selected Criterion Variables

Adjusted Post-test Mean on High Density Lipoproteins				
Running Activity Group	Swimming Activity Group	Control group	Mean Difference	C.I.
49.710		43.932	5.778*	1.26654
49.710	49.458		0.252	1.26654
	49.458	43.932	5.526*	1.26654
Adjusted Post-test Mean on Muscular Endurance				
Running Activity Group	Swimming Activity Group	Control group	Mean Difference	C.I.
21.951		19.099	2.852*	1.55379
21.951	21.551		0.40	1.55379
	21.551	19.099	2.452*	1.55379

* Significant at .05 level of confidence.

Results:

Table – I showed that there was a significant difference among running activity group, swimming activity group and control group on high density lipoproteins and muscular endurance.

Table – II shows that the Scheffé S Test for the difference between adjusted post-test means on high density lipoproteins between running activity and control groups (5.778) and swimming activity and control groups (5.526) were significant at .05 level of confidence. But there was no significant difference between running activity and swimming activity groups (0.252) on high density lipoproteins after the training programme.

Table – II also shows that the Scheffé S Test for the adjusted post-test mean difference on muscular endurance between running activity and control groups (2.852) and swimming activity and control groups (2.452) were significant at .05 level of confidence. But there was no significant difference between running activity and swimming activity groups (0.40) on muscular endurance after the training programme.

Conclusions:

Based on the results of the study, the following conclusion were drawn:

Participation in physical training resulted in a significant increase in high-density lipoprotein level and significant improvement in muscular endurance for both the experimental groups when compared with control group.

There was no significant difference between running activity group and swimming activity group on selected criterion variables.

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Effect Of Aerobic Dance And Pranayama On Selected Physiological Variables Among College Girls

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Abstract

The study was to design to find out the effects of aerobic dance and pranayama on selected physiological variables. To achieve this purpose, 90 girls were selected from St. Joseph's College, Cuddalore, they were not participate any sports and games. The age group of the subjects ranged between 18 to 20 years. The subjects were divided into three groups and each group consisted of thirty subjects. The two experimental groups were subjected to the two different training programmes, namely aerobic dance and pranayama and the third group acted as control group did not undergo any training. The subjects selected were from three categories via. Control and experimental groups I and II, and the data on the selected variables were collected before and after the training period. For testing the mean differences between the control and experimental groups before and after the training period, the level of significance was set at .05 level of confidence. The data of the 30 subjects from each group (control and experimental I & II) were statistically analysed the variables viz. resting pulse rate, breath holding time, vital capacity and respiratory rate by the use of analysis of covariance (ANCOVA). After eliminating the influence of pre test, the adjusted post test means of experimental groups and control group were tested for significance by using ANCOVA. If there were any significant difference found, Scheffe's post hoc test was applied.

Keywords: Aerobic dance, Pranayama.

Introduction

Aerobic dance

Dance aerobics consists of a preplanned or choreographed series of dance steps and exercises to music, it is considered to be an enjoyable way to condition cardio-respiratory system. Improved cardio respiratory endurance is one of the most important benefits of dance aerobic training programs. An aerobic dance work-out can be divided into 4 phases: warm-up, work-out and cool down.

Pranayama

Pranayama means the control of the vital force through concentration and regulated breathing. Proper breathing means, breathing fully and rhythmically, making use of all the parts of our lungs to increase our oxygen intake. It should be deep, slow and rhythmical. To achieve this, we need to be able to regulate the length and duration of our inhalation and exhalation and the retention of air in our lungs or the pauses between breaths. Yoga breathing exercises or pranayama teaches us on how we can recharge our body and control our mental state by regulating the flow of prana-the life force. This helps us achieve a calmer and more focused mind and increases our energy level.

Methodology

90 girls were selected from St. Joseph's College, Cuddalore, were selected at random for the study. They belonged to the age group of 18-20 years and were divided into three equal groups. The group I and group II underwent the aerobic and pranayama training programme for five days per week for eight weeks. Group III acted as control who did not participate any training programmes apart from their regular physical education activities as per their curriculum. The following variables namely resting pulse rate, breath holding time, vital capacity and respiratory rate were selected as criterion variables. The analysis of covariance was used to analyse the significant differences, if any among the groups. The 0.05 level of confidence was fixed as the level of significance to test the "F" ratio obtained by the analysis of covariance, which was considered as an appropriate.

Training Programme

Aerobic dance

Exercise was done in tune to the music. The aerobic programme included warm-up, workout (aerobic dance) and cool down sessions for a duration of 60 minutes. Using more vigorous and difficult movements during workout session after every 2 weeks gradually increased the intensity.

Warm up

The warming up exercise was done for 10 min. The warm up started slowly with the music tempo of about 100 beats/min. It included head roll, shoulder roll, body twist, knee lifts, leg lifts with rotation and sit-ups.

Workout (Aerobic dance)

The workout series was for 30 minutes. It included kicks, jumping jacks, knee lift, side kick, cross step, bouncing, twist point and cross. It included an increasing intensity of aerobic exercise at a faster phase, i.e., 140 beats/minute. The intensity and duration of the exercise increased after every 2 weeks.

Cool down

As the intensity decreased into the cool down, the music tempo and volume also decreased, invoking the releasing conclusion. It started with low intensity activity. It included stretching exercise for 10 minutes.

PRANAYAMA

The breathing practices are advised to practice in the first.

- (i) Hands in and out breathing
- (ii) Hands – stretch breathing and
- (iii) Ankle – stretch breathing.

Then sit comfortably in padmasana or sit comfortably in an erect spine position. In this position, the body is silently resting so that thought is absorbed into prana (vital force). After few minutes, practice the following pranayama.

Kapalabhati

Sit comfortably in padmasana. Exhale forcibly using abdominal muscles. Inhale passively by relaxing the abdominal muscles. Repeat as quickly as possible starting with 60 strokes per minute and increasing gradually upto 120 per minute. There is no holding of the breath. The rapid active exhalations with passive effortless inhalations are accomplished by flapping movements of the abdomen.

NADI SUDDHI PRANAYAMA

Sit erect in padmasana. Exhale completely. Close the right nostril with the thumb of the right hand. Inhale slowly, steadily and deeply as long as possible. Follow the entire course of the breath by feeling the movement of air. Do not hold the breath inside. Release the right and close the left nostril with the little and ring fingers of the right hand and breathe out through the right nostril. Again breath in through the right nostril and then breathe out through the left nostril. This forms one round of nadi suddhi. To start with, one can have nine rounds.

Data collection:

Resting pulse rate : The number of pulse beats per minutes was recorded as the score

Breath holding time : The time of holding the breath till the subject lets the air out was closed by using stopper to the nearest second as breadth holding time.

Vital capacity : Vital capacity was measured by a wet spirometer in liters

Respiratory rate: The apparatus expirograph was used to measure the respiratory rate. The number of sharp edges on the graph sheet indicating the number of breadths in one minute.

Statistical procedure: The analysis of covariance was used to find out the difference among the groups after training. The level of significance was set at .05 level of confidence. Scheffe's post Hock test was used to find out the significant differences between the groups.

Results

Table I. Analysis of covariance on resting pulse rate of aerobic dance, pranayama and control groups

Test	Aerobic Dance Group	Pranayama Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test Mean	81.3	80.03	80.7	Between	25.356	2	12.678	0.13
S.D.	11.37	10.12	7.78	Within	8471.93	87	97.379	
Post-test Mean	69.3	68.33	81	Between	2729.76	2	1364.88	23.04*
S.D.	8.5	8.35	7.23	Within	5153.53	87	59.24	
Adjusted Post-test Mean	68.83	68.81	80.99	Between	2697.63	2	1348.82	114.9*
				Within	1009.56	86	11.74	

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 and 87 & 2 and 86 are 3.114 and 3.115 respectively).

Table II. Analysis of covariance on breath holding time of aerobic dance, pranayama and control groups

Test	Aerobic Dance Group	Pranayama Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test Mean	51.47	51.81	50.84	Between	107.12	2	53.56	0.129
S.D.	9.55	8.65	1.99	Within	36121.9	87	415.19	
Post-test Mean	58.72	65.13	50.9	Between	961.479	2	480.74	28.68*
S.D.	10.15	7.26	1.94	Within	1458.31	87	16.762	
Adjusted Post-test Mean	58.65	64.8	51.31	Between	3586.39	2	1793.2	68.06*
				Within	2265.87	86	26.347	

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 and 87 & 2 and 86 are 3.114 and 3.115 respectively).

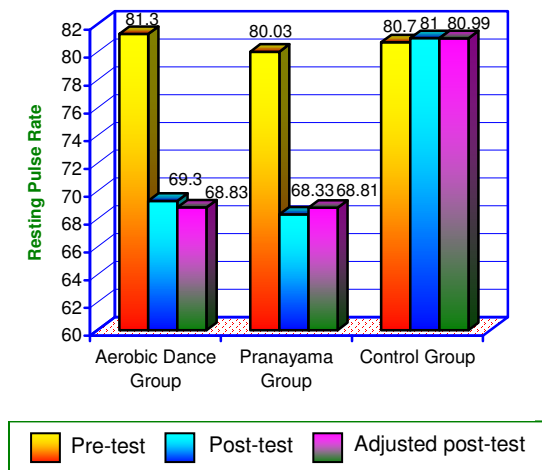


Figure I: Mean values of aerobic dance, pranayama and control groups on resting pulse rate

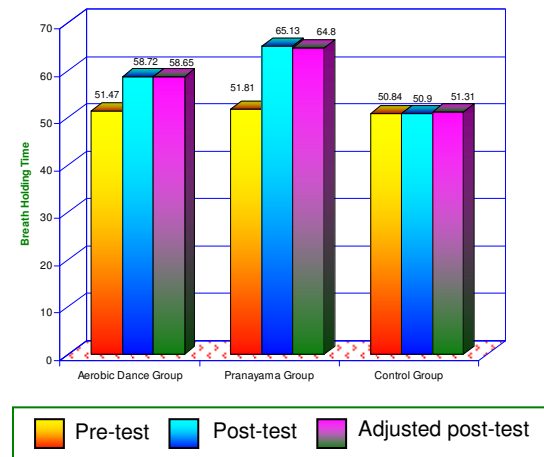


Figure II: Mean values of aerobic dance, pranayama and control groups on breath holding time

Table – III. Analysis of covariance on vital capacity of aerobic dance, pranayama and control groups

Test	Aerobic Dance Group	Pranayama Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test								
Mean	1565	1538.67	1553	Between	1485.28	2	742.64	0.052
S.D.	384.01	350.2	172.59	Within	1242493	87	14281	
Post-test								
Mean	1821.83	1898.33	1554.27	Between	18063.6	2	9031.8	7.44*
S.D.	437.82	417.84	169.29	Within	105613	87	1213.9	
Adjusted Post-test								
Mean	1808.64	1912.33	1553.47	Between	3452.8	2	1726.4	40.37*
				Within	3677.74	86	42.764	

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 and 87 & 2 and 86 are 3.114 and 3.115 respectively).

Table – IV. Analysis of covariance on respiratory rate of aerobic dance, pranayama and control groups

Test	Aerobic Dance Group	Pranayama Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test								
Mean	18.73	18.7	17.47	Between	8.822	2	4.411	3.08
S.D.	2.2	1.92	1.81	Within	124.59	87	1.432	
Post-test								
Mean	17.4	17.33	17.67	Between	31.267	2	15.633	2.995
S.D.	1.91	1.75	1.52	Within	454.11	87	5.219	
Adjusted Post-test								
Mean	17.06	17.02	18.32	Between	235.48	2	117.74	40.37*
				Within	250.82	86	2.917	

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 and 87 & 2 and 86 are 3.114 and 3.115 respectively).

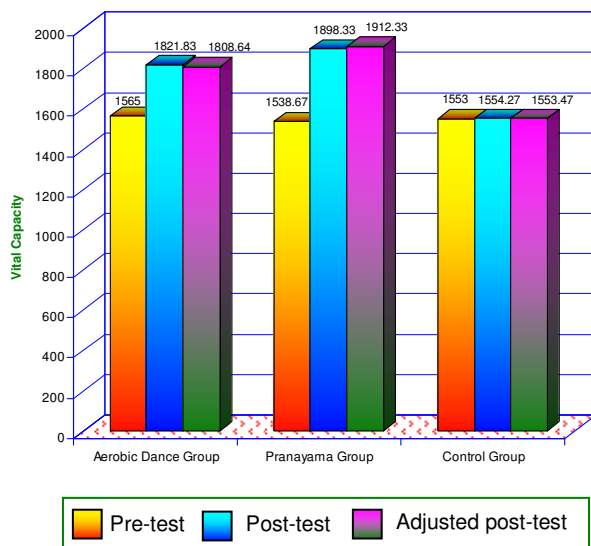


Figure III: Mean values of aerobic dance, pranayama and control groups on vital capacity

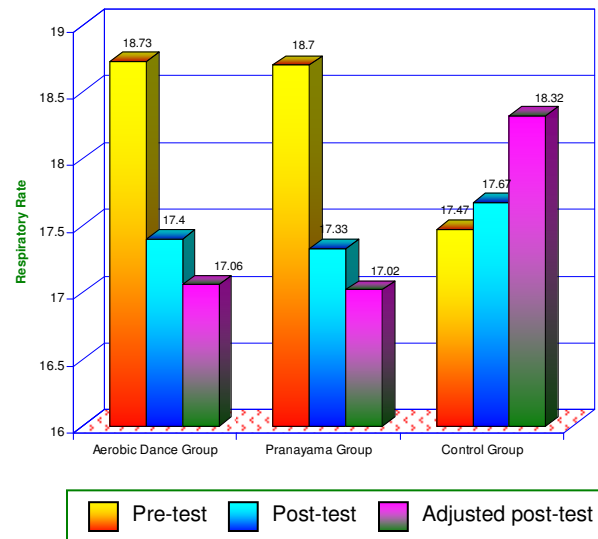


Figure IV: Mean values of aerobic dance, pranayama and control groups on respiratory rate

Discussion:

The aerobic dance, which actually involves very deep breathing can increase one's vital conjectural. It is however, conjectural means better gas exchange at the alveoli-capillary exchange surface. There would have to be concomitant increase in pulmonary capillarisation in under to make increased lung area effective as a gas exchange area of increased vital capacity and breath holding time. Basal metabolic rate (BMR) is the number of calories used by the body when it is at rest. Along with, burning more calories, aerobic dance increases the BMR & the BMR can remain increased after 30 minutes of moderate physical activity. For aerobic dance, more blood must be supplied to the working tissues. This means the heart will have to pump more blood and also more oxygen should reach the muscles by increased rate of respiration. Oxygen helps to burn the calories more efficiently. The aerobic dance training helps the persons to achieve better oxygen, carbon-di oxide exchange, resulting in better oxygen utilization, slower rate of breathing and vital capacity. If the body weight reduces, we can easily do the aerobic dance or any other activities without any breathing deformities and breathing problems. The concept of pranayama is often mistaken for deep breathing. In the later situation, movement of breath is fast and forceful. There is no time for the cells to get soaked in the inhaled oxygen. In pranayama, the movements are so slow that there is adequate time for every alveolus to soak in oxygen. The venous return is much better due to phases changes in breathing. The pulmonary vascular bed relaxes to accommodate more inflow of oxygen and blood. Better diffusion of gases occurs. Elasticity of the lungs and the entire respiratory tract is maintained to a ripe old age. The haemoglobin/oxygen saturation is enhanced during kumbhaka, as there is enough time for saturation. The vital capacity, inspiratory volumes are increased. The residual volume is decreased as more complete exhalation is performed. The alveoli are exercised, which promotes excellent excretion of toxins and gases. The healthy movement of diaphragm massages the abdominal organs, improving their blood supply and aiding the venous drainage to the thoracic cavity. So, the lungs become healthy and powerful, a good insurance against respiratory problems.

Conclusions

The results of the study seems to be permitting the following conclusions.

1. Participation in 8 weeks aerobic dance and pranayama resulted in improved vital capacity.
2. The breath holding time was increased after 8 week aerobic dance and pranayama training.
3. The number of resting pulse rate per minute is normalized after 8 weeks aerobic dance and pranayama training when compared with the control group.
4. The number of respiration per minute is also normalized after 8weeks aerobic dance and pranayama when compared with the control group.

Effect Of Some Psychological Factors On Performance

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INTRODUCTION

In the age of automation, human beings become compelled to adjust with the push button life, which creates the individual wants in a different manner. The chain of need, want and drive are restructured in a new demand cycle. To fulfill these demands people are facing so many stress and anxiety to do their normal daily performance which ultimately invited various psychosomatic disorders in later stage, sports persons are not exceptions.

Anxiety is considered as a block to an activity. A person who suffers from high intensity anxiety may not be able to devote his full potentialities to execute the performance. Anxiety is the emotional and cognitive dimension of physiological arousal (Ray and Weise – Bjornstal, 1999). The symptoms of anxiety can be listed as negative emotional feeling, feel threatened or failure fear, poor concentration level, increased breathing and pulse rate, increased rate of sweating etc.

Analysis of the performance structure with the continuous influence of anxiety to be one of the main interest area of research of sports psychologists (*Hanin 2000*). Anxiety has consistently been viewed as an emotion characterized by negative affect that impairs motor performance (*Eysenck, 1960*). In extreme cases this can lead to 'choking'; the level of acute performances decreases due to the occurrences of circumstances of heightened incentive for good performance (*Baumeister, 1984*). Two recent theories offer frame-works through which a better understanding of the anxiety-performance relationship may be gained, they are the conscious processing hypothesis (CPH) (Masters, 1992) and processing efficiency theory (PET) (*Eysenck and Calvo, 1992*).

Sports Achievement Motivation states that performance is the bi-product of biological, psychological, sociological and physical make up of an individual. Personal success in teams and individual events can be evaluated against standards. Sports and physical activities are generally achievement oriented. Sports achievement motivation has been discovered as strong psychological factor in the display of behavior and significantly related to one's psychological state (*Hayashi, 2001; Sears, 2007*). The state of anxiety may be a motivating force or it may interfere with successful performance. The perception of substantial imbalance between environment demand and response capabilities of under condition which is fail to meet the demands is perceived as having important levels of cognitive and somatic state anxiety (*Marten et. Al, 1990*). It has been said that anxiety and performance is of great interest to both researchers and athletes (*Marten and Mack, 1996*).

Sports psychologists have long believed that high levels of anxiety during the competition are harmful, worsening performance and even leading to dropout. Performance is specially affected when an athlete has suffered an injury and is in stress and anxiety about their return to the sports. The psychological issues related to injury which is most frequently discussed with athletes were fears about re-injury, fears about surgery, unwillingness to be a patient in a rehabilitation programme, avoidance of rehabilitation or sports related activities and concerns that the consequences of the injury will disappoint others (*Mann, et al., 2007*).

METHODOLOGY

From the 51st National Open Athletic Championship of Athletic Federation of India 2011, hold in West Bengal, 25 women and 59 men athletes coming from different states of India for the competition were considered as the subjects.

Variables:The variables considered for this study were performance, Sports Achievement Motivation and Sports Competition Anxiety. Motivation were measured through Achievement Motivation Questionnaire developed by M.L. Kamalesh, 1991, Anxiety was measured through Sports Competition Anxiety Test Questionnaire developed by Rainer Meatrns, 1977, and performance was assessed by the points according to the International Association of athletic Federation (IAAF) norms considering the time, height and distance in different events of athletes. The data were collected on the onset of the competition and during the competition also.

RESULTS

Table No. 1- The Mean and S.D. of Sports Achievement Motivation and Sports Competition Anxiety of men and women athletes

Variables	Men Athletes		Women Athletes		t-value
	Mean	SD	Mean	SD	
Sports Achievement Motivation	28.54	± 6.20	27.36	± 4.96	0.63
Sports Competition Anxiety	18.85	± 3.38	19.12	± 4.05	0.30

Significant at 0.05 level

Table Value 1.99

Table No. 1 revealed that there is no significant difference between men and women on Sports Achievement Motivation and Sports Competition Anxiety although the Women's have less Motivation but higher Anxiety level that in companion to the Men athletes. Singh(1980), investigated Sports Competition Anxiety level of 118 top level track and field athletes (76 male and 42 females), and 71 hockey players (45 male and 26 female) and administered the Sports Competition Anxiety test by Martens (SCAT). He concluded that the male athletes have less competitive anxiety as compare to female

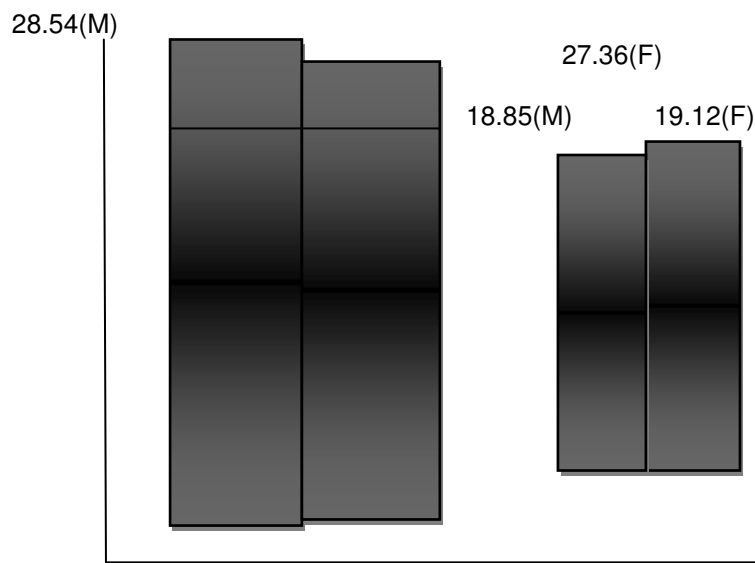


Fig. 1 : Comparison of Means Difference on Sports Achievement Motivation and Sports Competition Anxiety level of men and women athlete.

In this investigation the result of national level athletes have shown the same trends as mentioned by Singh.

Obviously, the women bear more anxiety as compared to men athletes. The findings elicit that Sports Competition Anxiety hampered the women sports performance rather than men sports performance.

Table No. 2- Correlation coefficient of Sports Achievement Motivation and Sports Competition Anxiety with performance.

Variable	Men Performance	Athletic Women performance
Sports Achievement Motivation	0.01	0.03
Sports Competition Anxiety	0.19	- 0.16

Significant at 0.05 level

Table value = 0.205

Table No. 2 shows the correlation between Sports Achievement Motivation, Sports Competition Anxiety and performance. The findings indicated that achievement motivation level was different in different cases. For the men participants partial positive correlation coefficient with very low value has found. Very Low partial positive correlation coefficient has found between the sports performance and Sports Competition Anxiety. For women the correlation coefficient between performance and Sports Achievement Motivation was also very low. For performance and anxiety the correlation coefficient was very low and negative. It was found that performance of men and women was not affected by the Sports Achievement Motivation but was influenced a little bit by Sports Competition Anxiety.

The presented result may be co-related with the findings of Fox (1987), measured the relationship of achievement motivation of Canadian swimmer with their performance and mentioned that there was no significant relationship between Sports Achievement Motivation and swimming performance.

The same findings of the study conducted by Zenzen (2002) mentioned that no significant relationship between Sports Achievement Motivation and sports performance. However, contrary to the findings the present study Unierzyski (2003) has found significant correlation between Sports Achievement Motivation and young Tennis players performance.

In athletics it was found that the performance are very instant except the long distance running. As in case of throwing and jumping events, the total execution takes place within a very few seconds. Hence too much anxiety may create stimulation and enthusiasm which may hinder the performance. In open national level where the international level athletes are gathered then this type of very luminous fluctuation of psychological status may represent a huge difference in performance.

From the above it is clear that the performance of men and women athletes in athletic track and field events were not depend on the Sports Achievement Motivation. At the same time the above result reflected that Sports Competition Anxiety affected the sports performance of national level men and women athletes.

CONCLUSIONS

Men athletes have better Sports Achievement Motivation than the women Athletes.
The women athletes shows higher level of Sports Competition Anxiety than the men athletes.
Men and women athletic performance not does not influenced by the Sports Achievement Motivation. There is low positive impact of Sports Competitive Anxiety on sports performance of men athletes. There is low negative impact of Sports Competitive Anxiety on sports performance of women athletes. Lower level of anxiety practically facilitates the men sports performance.

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Fitness and Exercise through Circuit Training

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Introduction

Fitness means being in good physical condition and being able to function at one's best level. Total fitness for living necessarily involves spiritual, mental, emotional and social, as well as physical qualities. Each is dependent upon and affected by the other. Though our primary concern is developing good physical condition, we must recognize this interrelatedness and interdependence in our approach. It must be recognized not only in terms of the complexity of the mutual effects created, but also in its implication that understanding is needed if efforts are to be meaningful and lasting.

Physical fitness involves the performance of the heart and lungs, and the muscles of the body. And, since what we do with our bodies also affects what we can do with our minds, fitness influences to some degree qualities such as mental alertness and emotional stability.

Physical fitness must be defined with consideration for an individual's age and lifestyle. For a younger person, physical fitness defined as a physical condition that allows an individual to work without becoming overly fatigued, perform daily chores, and have enough energy left over to engage in leisure activities. For example, if an individual is unable to make it through an eight-hour work day or is too tired at the end of the day for leisure or household activities such as gardening, walking, playing tennis or cleaning, then the or she probably has too low a level of physical fitness. For the older person who may not necessarily be working eight to ten hour days, physical fitness could be defined within the context of being able to conduct the day's chores [cleaning, dressing, shopping, doing laundry, climbing stairs] without becoming exhausted or tired. Stated another way, the person has enough energy to do daily chores, and still has a reserve of energy left over in order to participate in some type of leisure activity such as gardening or going for a walk.

Fitness and Exercise

Today, there is growing emphasis on looking good, feeling good and living longer. Increasingly, scientific evidence tells us that one of the keys to achieving these ideals is fitness and exercise. But if you spend your days at a sedentary job and pass your evenings as a "couch potato". It may require some determination and commitment to make regular activity a part of your daily routine. Exercise is not just for Olympic hopefuls or supermodels. In fact, you're never too unfit, too young or too old to get started. Regardless of your age, gender or role in life, you can benefit from regular physical activity. If you're committed, exercise in combination with a sensible diet can help provide an overall sense of well-being and can even help prevent chronic illness, disability and premature death.

Benefits of Exercise and Physical Activity

Physical activity has a relaxation effect and can improve sleep as well as reduce mental stress and raise energy levels. Depending on the selection and variety of physical activity and sports, it can provide daily variety, fun: develop the sense of competitiveness as well as open up to a new of achievement and self satisfaction of taking person health into your own hands.

Some of the benefits of increased activity are, improved Health, increased efficiency of heart and lungs, reduced cholesterol levels, increased muscle strength, reduced blood pressure, reduced risk of major illnesses such as diabetes and heart disease, weight loss, and Mind over Immobility. Getting moving is a challenge because today physical activity is less a part of our

daily lives. There are fewer jobs that require physical exertion. We've become a mechanically mobile society, relying on machines rather than muscle to get around. In addition, we've become a nation of observers with more people [including children] spending their leisure time pursuing just that Leisure. Consequently, statistics show that obesity and the problems that come with it [high blood pressure, diabetes, stroke, etc.] are on the rise, but statistics also show that preventive medicine pays off, so don't wait until your doctor gives you an ultimatum. Take the initiative to get active now.

Circuit Training

Circuit training is a workout routine that combines cardiovascular fitness and resistance training. It was first proposed in the late 1950s as a method to develop general fitness. The initial routines were arranged in a circle, alternating between different muscle groups [hence the name circuit training]. By allowing only a short rest interval of 30-90 seconds between stations, cardiovascular fitness is gained along with the benefits of resistance training. When developing a circuit training routine, a wide variety of exercises and equipment can be utilized. Much of the equipment is relatively inexpensive and includes surgical tubing, jump rope, your own body weight, dumbbells, medicine balls, physioballs and weight training machines. A circuit can consist of as few as six stations to as many as 15 stations based on the goals and pre-training levels of the participants.

Aerobic Circuit Training

Aerobics are exercises that demand a lot of oxygen and significantly increase your heart rate. Stretching is the type of exercise used to keep muscles and joints flexible as well as to warm up for aerobic exercise and to cool down after it. Aerobic exercise is exercise that strengthens the heart and lungs and helps them to do more work more efficiently. It is exercise that makes your heart and lungs deliver more oxygen to your body than usual for an extended period of time. For someone running a marathon that period of time is usually over two hours: for a further tri athlete it can be for as long as eight hours. Aerobic Circuit training provides the basis for the Eastern Wyoming Fitness Center. Twelve individual weight stations and twelve stationary bicycles provide exercises for individuals wishing to perform circuit training.

Physical Deterioration

A general physical deterioration which is also with our present day patterns of living and neglect of basic fitness habits. The age in which we live seems to have bred under exercised, overfed individuals-young and old who are fat, flabby and weak in the upper trunk, back, abdominal areas and feet. Lack of physical activity has been shown also to physical activity has been shown also to be related to the prevalence of varicose veins, hemorrhoids and muscle atrophy.

Changing Living Patterns

It should be clear that despite advances in medicine and technology which have made life easier for us, many serious health and fitness problems exist that is a threat to us as individuals and as a nation. Laborsaving devices in the home and at work, together with the automobile, have taken much of the previously necessary physical activity out of our normal living activities. The increased time spent sitting both on the job and in the home describes what is called the sedentary life. A general high standard of living and affluence have drastically changed our eating and other living habits. Increased Leisure time, rather than becoming a blessing, has for many resulted only in a continuation of sedentary living, overeating, increased tension and unsound health practices. There is no question that the major health problems today have to do with our patterns of living, and this evident not only in the united states, but in the leading industrial nations of the world. A 1970 United Nations report states clearly that man has lengthened his life span as much as he can by fighting contagious disease. Heart and lung ailments, cancers, strokes, auto accidents and suicides are listed among the major causes of death today. The report states that to increase the life span any further, a change in our way of living must occur we must introduce new factors capable of preventing death from a different range of diseases.

Comparison Of Differentiation Ability And Rhythm Ability Of Basketball And Handball Players

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Abstract

To get the purpose of this study thirty (30) female (15 Basketball and 15 Handball) subjects were selected randomly from Jiwaji University, Gwalior (M.P.) and department of Physical Education Institute of professional studies, Gwalior, (M.P.), who have participated in inter university competition in basketball and handball. Their age ranged between 18 to 25 years. The test of Differentiation and Rhythm Ability developed by Peter Hirtz in 1958, administered by scholar in Institute of Professional Studies and Jiwaji University, Gwalior, (M.P.). Differentiation Ability was measure by the Backward Medicine Ball throw test and rhythm was measured by Sprint at the Given Rhythm Test. The tests were designed so that they could be administered by professional and clinicians in the field who lack specialized measurement equipment, training and resources.

In order to compare differentiation ability and rhythm ability among basketball and handball players independent "t-test" was employed as statistical technique at the 0.05% level of significance. Result shows that there is significant difference in differentiation ability among basketball and handball players as the obtained "t" value 2.45 is significantly higher than the tabulated "t" value 2.04 but another result shows that there is significant difference in rhythm ability among basketball and handball players as the obtained "t" value 1.41 is significantly lesser than the tabulated "t" value 2.04.

Key Words: Differentiation Ability, Rhythm Ability

Introduction The twenty first century is the most rapidly changing century of all time. Rapidity of changes created unusual demands on individuals and on system of education. Today education must not only include the body and knowledge, but also to develop inquiring minds that will enable them to comprehend and accept what is to come tomorrow. As Jacks, the British philosopher, puts it, living becomes an art only, "when work and play, labor and leisure, mind and body, education and recreation, are governed by a single vision of excellence and a continuous passion for achieving it. In different sports requirement of coordinative abilities are different and these abilities ensures higher movement efficiency and movement economy, whereas in some sports events they helps in higher movement frequency with high explosiveness and force application.

MATERIAL AND METHODS: To get the purpose of this study thirty (30) female (15 Basketball and 15 Handball) subjects were selected randomly from Jiwaji University, Gwalior (M.P.) and department of Physical Education Institute of professional studies, Gwalior, (M.P.), who have participated in inter university competition in basketball and handball. Their age ranged between 18 to 25 years. For the better result and convenience of the researcher the test of Differentiation Ability and Rhythm Ability developed by Peter Hirtz in 1958, administered by scholar in Institute of Professional Studies and Jiwaji University, Gwalior, (M.P.). Differentiation Ability was measure by the Backward Medicine Ball throw test and rhythm was measured by Sprint at the Given Rhythm Test. In order to compare differentiation ability and rhythm ability among basketball and handball players independent "t-test" was employed as statistical technique at the 0.05% level of significance.

Table No. - 1
Descriptive Analysis of Differentiation Ability of Basketball and Handball Players

Groups	Maximum	Minimum	Range	Mean	S.D.
Basketball	19	10	9	13.60	2.61
Handball	19	6	13	10.73	3.69

S.D. = Standard Deviation

Table no.1 shows that the descriptive value of maximum, minimum, range, mean, and standard deviation of differentiation ability of basketball group are 19, 10, 9, 13.6, and 2.61 respectively and for handball group are 19, 6, 13, 10.73 and 3.69 respectively.

Table - 2
Comparison of Differentiation Ability for Basketball and Handball Players

Players	Mean	S.D.	M.D.	S.E.	"t" ratio
Basketball	13.6	2.61	2.87	1.17	2.45*
Handball	10.73	3.69			

*Significant at 0.05% level of significance, $t_{(28)(0.05)} = 2.04$

S.D. =Standard Deviation, M.D. =Mean Deviation, S.E. =Slandered Error
RESULTS

Table no.2 shows that there is significant difference in differentiation ability among basketball and handball players as the obtained "t" value 2.45 is significantly higher than the tabulated "t" value 2.04 at the 0.05 level of significance. Graphical presentation of the results is given below.

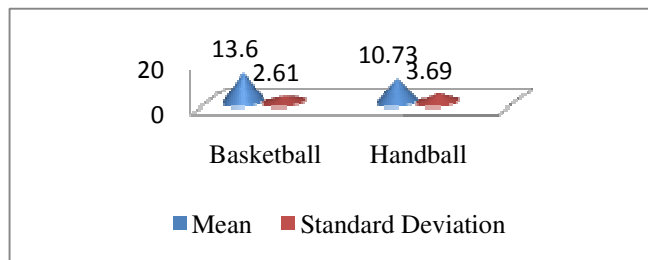


Table No. - 3
Descriptive Analysis of Rhythm Ability of Basketball and Handball Players

Groups	Maximum	Minimum	Range	Mean	S.D.
Basketball	2.28	0.21	2.07	1.50	0.56
Handball	1.89	0.45	1.44	1.25	0.41

Table – 3 Shows that the descriptive value of maximum, minimum, range, mean, and standard deviation of rhythm ability of basketball group are 2.28, 0.21, 2.07, 1.50, and 0.56 and respectively and for handball group are 1.89, .45, 1.44, 1.25, and 0.41 respectively.

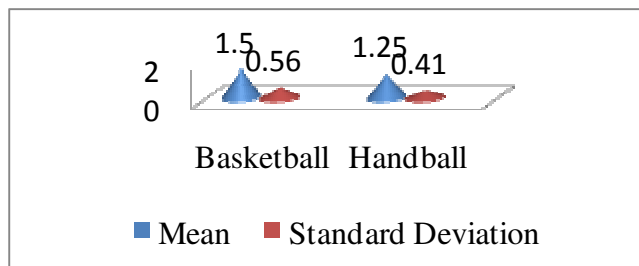
Table - 4
Comparison of Rhythm Ability for Basketball and Handball Players

Gro ups	Mean	S.D.	M.D.	S.E.	"t" ratio
Basketball	1.50	0.56	0.18	0.25	1.41
Handball	1.25	0.41			

*Significant at 0.05% level of significance, $t_{(28)(0.05)} = 2.04$

S.D. =Slandered Deviation, M.D. =Mean Deviation, S.E. =Slandered Error
RESULTS

Table - 4 shows that there is significant difference in rhythm ability among basketball and handball players as the obtained "t" value 1.41 is significantly lesser than the tabulated "t" value 2.04 at the 0.05 level of significance.



FINDINGS

Findings of this study show that there is significant difference among basketball and handball players in the means of differentiation ability. This may be because of the variability in the accuracy of shooting are different in both the sports specifically or it may be the control over the ball by the players.

Findings of the variable show that there is no significant difference in basketball and handball players in the means of differentiation ability. This may be due to the activity namely dribbling, passing etc are the similar type of activity in both of the sports.

CONCLUSION

Findings of the study show that there is significant difference among Basketball and Handball players in the means of differentiation ability. Many studies are conducted on the same variables and selected subjects in past and the findings shows that differentiation ability is vary in these both sports because of the nature of the activity. In case of rhythm ability no significance difference was found among basketball and handball players because of similar kind of skills which is used in basketball and handball.

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Tsunami: Unprecedented Catastrophe Global Consensus

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Looking sharp with an impetus to work smart has always remained be remained be resolute factor scaling new dimensions of high underlining the adage it is never too late to start a new career or life with a beautiful feeling experiencing the paradigm of change in graceful transition from not being afraid of tomorrow for you're seen yesterday and you love today, this being the yardstick to measure one's strength to leave behind an act of tsunami terror that ripped apart the shores of South East Asian coastal reigns inviting the Global push to reach the survivors of catastrophe with an expertise and technical assistance explicitly demanding to the keep the momentum on roll. India certainly needs to do a bit of scientific thinking on its part and drive an initiative to draw other countries collectively redressing the urgent task of unwarranted tsunamis in future, precisely, with a device like tsunamis prediction system where it facilitates to detect and locate tsunami waves which follow whenever there is high intensity earthquakes in the ocean.

It's more than three weeks since the killer tsunami struck many nations of Asia. Indonesia the worst hit, Sri Lanka, India (including Andaman Nicobar islands), Thailand, Myanmar, Malaysia and even Kenya and Somalia were affected, although the scale of the impact varied from each country, the pain and grief over the loss of friends and family, the security of shelter and livelihood are felt every where, particularly tragic is the fate of orphaned children, the old and the infant who are left behind. The scope and extent of emotional and psychological damage to the survivors is impossible to imagine and understand, although relief efforts take care of providing basic amenities to the victims, it will take much more than that to heal the Psychological and emotional scars as they piece together the fragile remains of their liver, further the level of literacy and education would only exacerbate the despair of the victims and they would find it difficult to comprehend why they were chosen to suffer this late, more than ever, it is absolutely necessary now that we train volunteers who are willing to participate in the long-term rehabilitation of those traumatized by the Tsunami.

Disasters, donations, distribution and delay form only a predictable combination that plays out whenever a major blow strikes, it is not as if natural disasters strike only the developing countries, the paper informs that there were 15 natural disasters in the US over the last 15 years and these resulted in \$43 billion losses, while the most massive economic losses from natural disasters occur in developed countries because the value of exposed capital is higher in absolute terms, developing countries suffer greater and more disruptive impact of natural disasters owing to several reasons, for instance, infrastructure is less resilient building standards are lower, incentives for mitigation are absent, private markets do not provide catastrophe insurance for home owners and small business and there are greater constraints on government resources available to cope with disasters, as a result the first loss to happen in the developing world is usually of human lives as in the recent tsunami, but there are extensive fiscal and economic consequences that follow.

More than the damage that disasters cause, what can be more of a problem is the absence of financial strategy to recover from the attack, fiscal resources are limited and insurance penetration is low, what really happens is, the governments get into action only after the event. Insurance industry feels that there were few life claims and most of the claims that have come in so far have been under the motor insurance category for vehicles that had been washed away or got battered by seawater, precisely, there is no estimate available to what the number of claims could be since the different insurance companies are still awaiting claims from varied strata like personal accidents, fire/flood, motor car damage and others. Most of the companies have been pushing their memoranda not heeding to calamity relief criteria but as

special packages with a view to improving the quality of project formulation in the insurance sector introducing innovative concepts to reach out to large numbers of people to bring quality life to the forefront and to inculcate feelings of patriotism and togetherness transcending the barriers of all human customary and traditional impediments.

The task of providing relief to and rehabilitating those affected by the tsunami needs to be vigorously pursued simultaneously with efforts to minimize the impact of such disasters, the economic costs in rupee terms are therefore likely to be substantial even if they cannot be precisely determined at this point of time. It is useful to view the costs on account of relief and rehabilitation as one's to be incurred in the short run, say couple of years. The political economy aspect of the recent tsunami attack is a tricky one as governance and accountability are famously weak in India, leakages could occur and the real benefits of relief and rehabilitation expenditures may not be passed on in full to the victims, given this reality, local administrators involved with relief and operations would need to sharply minimize the impact of weak governance and take assistance whenever possible of the tested sections of civil society. The question of meeting the costs of relief and rehabilitation is now addressed mainly by governments at the centre and in the states. Contributions from individuals and corporate houses aided as they are by tax exemptions are useful but would not be adequate.

Tsunami has certainly brought about a global consensus on unprecedented levels in a sense that a unity of purpose has been displayed throughout the world addressing issues such as trade, environmental protections and there is a little chance that politicians might be indifferent to the issue of environmental protections but it is in the world's interest to promote environmental protection and regulation in a transparent and rational manner. The developing countries should work together with the US, THE European Union, Japan, Russia and Australia to ensure the success of multilateral trade and protection negotiations.

The basic premise being all countries throughout the world remain united with regard to tsunami catastrophe and see that best measures can be implemented and aided to better the cause of human welfare and dignity evidently reinforcing the thought of global oneness and seemingly structuralizing the economy up skilling and retaining the workforce improved productivity and worker incomes with a high value added operations to sustain the ongoing rhythm.

The year 2005 will offer many opportunities for citizens around the world to insist that their leaders keep their promises, the rich and powerful nations often declare their leadership in the world rich countries than to fulfill their pledges to the countries affected with the disaster, poor, hungry and disease ridden peoples when lies the path to sustained peace and 2005 is the year that words can become reality and that the world can be begin to fulfill its hopes for the new century.

Let us make the world leaders aware that we the people aspire to shared peace and prosperity and pledge that the rich and powerful should take real actions to help the disaster stricken, the poor, the weak, the down trodden and the suffering.

This tool choice can certainly help people pursue their dreams by focusing on their strengths, weaknesses and challenges to move past difficulties unearthing long forgotten talents, abilities and dreams, ultimately making them become better communities and helping to shape a bright future for the world at large.

History of Physical Education in Ancient India

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Introduction:

India has had a long history of physical education, far more ancient than Greece. But in our times When the Olympic Games occurring every four years have become probably the biggest planetary event, most people know that the Games originated more than two thousand years ago in Greece. In addition, Greeks have given the Western world through many beautiful statues a keen sense of bodily perfection, an ideal of physical beauty unsurpassed to this day. There was such an emphasis on the importance of beauty and physical prowess that some of the highest honours in Greek society were bestowed on athletes, to an extent unknown before and unsurpassed since. India had already a very cultured society one or two millennia at least before the Greek awakening around 800 B.C. Yet, if ancient Greeks are easily perceived as very physical in their preoccupations, Indians in contrast are rather seen as metaphysical beings, hardly interested in material things. And it is indeed true that at a certain stage of the development of Indian culture, a deep influence has been cast on Indian collective psyche, bringing about a tendency to consider physical life as somewhat unreal. Since ancient times, people in India believed that the human body is indeed an instrument of *dharma* (*shareeramevādyā hi khalu dharmasādhanaṁ*). Hence the body is to be properly nourished, and maintained. In medieval Karnataka people gave as much importance to physical exercise as to literary education. The principle of “a sound mind in a sound body” was not only accepted but also faithfully practiced. The system of *yoga* was the first step in spiritual training. *Yoga* comprises full-fledged toning of the body and mind. It includes the use of various body postures to control breathing and muscle movements, and to help gain control over human passions as well. It was the general belief that this balancing of the body and mind led to intellectual strength. Village schools were usually situated in the temple premises or in the courtyard of *mathas*, where children played after daytime lessons. Besides this, every village had one or two playgrounds, where sporting events and games were held during the annual fair of the village deity. These involved wrestling, boxing, *mallakhambha* (pillar acrobatics), the shooting of arrows, and demonstrations of strength such as weight lifting. Bigger grounds were reserved for ram-fights, buffalo fights, fencing and duelling. Various ball games, and the indigenous sports of *kho-kho* and *kabaddi* were common. Most childrens' sports in medieval India ensured body-development. The economy and variety of indigenous games were greatly admired by visiting foreign travelers.

Discussion:

The following are some of important sports events played in Ancient India.

Wrestling:

Manasollasa mentions special coaching provided to wrestlers. To warm up, the would-be-wrestlers had to do jog three miles early morning. This was followed by *dands* and sit-ups. Weight lifting was also undertaken (see) by the wrestlers in order to strengthen the body. After resting for a while, wrestlers descended into the wrestling pit filled with finely sieved sand. They saluted each other in traditional style and began the joust when a signal was given. Various grips (*pēchu*) were practiced and had Kannada names. Youngsters flocked to these bouts to cheer and to mimic the gestures of grown-ups (see). The wrestler's body was well massaged before the bout began, and dust was applied to wrestlers' hands in order to prevent them from slipping over the opponent's oiled body. *Bhavishnu* or future-wrestlers were fed on a special diet of black gram, meat, curds, flour mixed with milk, and clarified butter. They were specially guarded and prevented from spending time in the company of women².

Archery:

Archery and other Martial Arts Garadis or village gymnasiums were the training ground for future soldiers, as these were equipped with lāthis, spears, clubs, maces, and shields³. Prince Kumara Rama received martial training in such a garadi. Archery occupied an important place in the physical training of youngsters. Visual concentration and the coordination of hands, eyes, and feet were basic essentials in military training. Contests such as the *matsyavēdha* involved shooting an arrow into a revolving ball or a fish placed overhead, while looking at its reflection in the water below. "Drawing" the sketch of a date-tree with the help of rapidly-shot arrows was another feat⁴. Shooting arrows and throwing rocks from Doddabetta to Chikkabetta, two hillocks in Shravanabelagola, was popular in the 11th and 12th centuries and considered as acts of valor, as indicated by local inscriptions. Fights with a buffalo, a bull and an elephant were considered dangerous, but were highly applauded.

Hunting and other sports:

Hunting was another important pastime indulged in by the royalty and the commoners alike. Mastery attained by youngsters in wielding various weapons such as the bow and arrow, spears, clubs and the chitbil (catapult) were put to the test during hunting expeditions. Indiscriminate killing of animals was avoided and expeditions were organized only when wild animals overbred, resulting in a scarcity of food for all animals in the forest.

Conclusions:

Physical exercises undertaken by the Vijayanagara king Krishnadevaraya included body massage, wrestling, weight lifting and horse riding. These were undertaken daily, as documented by Domingo Paes. Krishnadevaraya's portrait in bronze at Tirupati shows the suppleness of his body maintained through regular exercise. Father Du Jarric, who visited a gymnasium at Chandragiri in the 17th century, has left an interesting account of nobles who exercised through boxing, jumping, fencing and wrestling. He observed that these exercises were undertaken almost daily before dinner in order to be fit and healthy; "*thus men as old as seventy years look only thirty*". Perhaps such daily exercises were not common in contemporary Europe. Pietro della Valle who visited Ikkeri in 1623 C.E. has left a vivid description of *kōlāta* by women. He has also stated that among Indians it is the custom for everyone to manage and use one sort of arms wherein he "accustomed himself."

Recommendations:

1. Physical Education was most prominent in the Kshatriyas or military caste in India. This people use to go regular physical exercise to maintain fitness and to fight with the enemies.
2. Physical training and dances resolved around religious practices and ceremonies.
3. A Strong emphasis on personal hygiene was tied into physical exercise and spiritual purification.
4. Yogic exercises was practised in India since ancient times by sadhus, saints etc.

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History of education-physical education, Kamat Potpourri

A Study on the effect of Plyometric exercises for development of Speed among Sprinters of Osmania University

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Abstract: Background: The Plyometric exercises are a vital component for Sprinters for maximal speed and should be included in any conditioning program. Plyometric exercise such as hopping, bounding, jumping etc are very essential to the Sprinters. Plyometric is used to increase the speed or force of muscular constructions, providing explosiveness for a Variety of sport specific activities. Plyometrics are useful for several sports notably soccer, rugby, basketball, track and field athletics, racket sports and martial arts. The Purpose of the the present study to find out the effect of Plyometric exercises for the development of Speed among Sprinters of Osmania University in India..Method: The sample for the present study is forty Hyderabad Male Sprinters from various colleges of Osmania University in India. The experimental group is 20 male Sprinters and controlled group is 20 University Male Sprinters. The twelve weeks of training were given to the experimental group which consists of Plyometric exercises on alternate days i.e. three sessions per week and controlled group were given general training. 30 Meter Run were used for Pre Test and Post Test for both the experimental and controlled group to find out the effect of Plyometric exercises for development of Speed. Result: This study shows that due to the Plyometric exercise the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results. Conclusions: It is concluded that due the Plyometric Exercises there will improvement of Speed among Sprinters of Osmania University.

Key Words: Plyometric exercises, sprinters, Speed etc.

INTRODUCTION

Plyometric training involves and uses practicing plyometric movements to enhance tissues abilities and train nerve cells to stimulate a specific pattern of [muscle contraction] so the muscle generates as strong a contraction as possible in the shortest amount of time. A plyometric contraction involves first a rapid muscle lengthening movement (eccentric phase), followed by a short resting phase (amortization phase), then an explosive muscle shortening movement (concentric phase), which enables muscles to work together in doing the particular motion. Plyometric training engages the myotatic reflex, which is the automatic contraction of muscles when their stretch sensory receptors are stimulated. Plyometric drills are used in many sports training programs to help build speed, power, improve coordination, agility, and improve sports performance. Any athlete that participates in sports that involve jumping, landing, or explosive moves can benefit from plyometric drills. Many plyometric exercises are especially geared toward football training. Using plyometrics for soccer is one the most effective ways to increase explosive speed and power. Speed is a key component of Physical fitness which is very important for athletes specially sprinters for giving the high level of performance in competition. Speed is the performance pre requisite to do motor actions under given conditions in minimum of time. Speed is the quickness of movement of a limb, whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can be expressed as any one of, or combination of, the following: maximum speed, elastic strength and speed endurance.

Method:

The Purpose of the the present study to find out the effect of Plyometric exercises for the development of Speed among Sprinters of Osmania University. The sample for the present study is forty Male Sprinters from various colleges of Osmania University in India. The experimental group is 20 male sprinters and controlled group is 20 University Male sprinter. The twelve weeks of training were given to the experimental group which consists of Plyometric exercises on alternate days i.e. three sessions per week and controlled group were given general training. Plyometric exercises such hopping, bounding, box jumps, tuck jumps etc. are used in the training for the experimental group. 30 Meter Run were used for Pre Test and Post Test for both the experimental and controlled group to find out the effect of Plyometric exercises for development of speed.

30 Meters Run:

purpose: The aim of this test is to determine speed.

equipment required: measuring tape, or marked track, stop watch, cone markers etc. flat and clear surface of at least 50 meters.

procedure: The test involves running a single maximum sprint over 30 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed. The tester should provide hints for maximizing speed (such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard through the finish line.

Results

This study shows that due to the Plyometric exercise the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results.

Discussion

Table - I

Pre Test	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
30 M	Experimental Group	20	4.51	0.24	0.08	-1.81	38.00	0.09
30 M	Control Group	20	4.59	0.46	0.15			

In Table No.1 in Pre Test in 30 M Run The Mean score of Experimental Group is 4.51 and controlled group is 4.59 there is a difference of 0.08 between both the group.

Table - II

Post Test	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
30 M	Experimental Group	20	4.31	0.22	0.06	-1.81	38.00	0.09
30 M	Control Group	20	4.61	0.44	0.13			

In Table No.2 in Post Test in 30 M Run The Mean score of Experimental Group is 4.31 and controlled group is 4.61 there is a difference of 0.30 between both the groups. The Experimental group has increased 0.20 between Pre Test to Post Test due to plyometric training and controlled group is decreased by 0.02 due to the general training.

Conclusion:

It is concluded that due to the Plyometric Exercises there will be improvement of Speed among sprinters of Osmania University.

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Effect Of Short Term Aerobic And Anaerobic Training Among Hockey Players

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ABSTRACT

The purpose of the study was to investigate the effect of short term preseason training programme on aerobic and anaerobic power among hockey players. Forty hockey players selected as a subjects from the Department of Physical Education and Sports Sciences, Annamalai University. The age, height and weight of the subjects ranged from 18 to 24 years, 160 to 171 centimeters and 55 to 66 kilograms respectively. The selected subjects were randomly assigned into two equal groups of 20 subjects each. Short term training group – I, Control group – II. The study was to investigate the effect of short term aerobic and anaerobic training among hockey players. The analysis of data revealed that four weeks of short term aerobic and anaerobic training had an impact of 1.54% on aerobic power, 1.76% on anaerobic power.

Key words: Short-term, Aerobic and Anaerobic.

INTRODUCTION

The human body is machine of wondrous complexity capable of strong and forceful movement. This machine is made up of slightly more than two hundreds bones to which are attached better than six hundred muscles. There are numerous factors, which influence performance of sportsman. The physique including size, weight and height play a significant role in his regard. Aerobic capacity describes the functional capacity of the cardiorespiratory system, (*heart, lungs and blood vessels*). Aerobic capacity is defined as the maximum amount of oxygen the body can use during a specified period, usually during intense exercise. It is a function both of cardiorespiratory performance and the maximum ability to remove and utilize oxygen from circulating blood. Furlan et al., (1993) stated that the experimental group improved their cardiorespiratory fitness, whereas the control group exhibited no such changes.

Anaerobic exercise works on particular muscles and their size, endurance, and power. Weight lifting and resistance training are some of the examples of anaerobic exercise. This form of exercise offer many benefits and is a good complement to our aerobic exercise. It may also increase bone thickness. Anaerobic metabolism, or anaerobic energy expenditure, is a natural part of whole-body metabolic energy expenditure. Scott, (2005) Fast twitch skeletal muscle (as compared to slow twitch muscle) operates using anaerobic metabolic systems, such that any recruitment of fast twitch muscle fibers will lead to increased anaerobic energy expenditure. Intense exercise lasting upwards of about four minutes (e.g., a mile race) may still have a considerable anaerobic energy expenditure component. Anaerobic energy expenditure is difficult to accurately quantify, although several reasonable methods to estimate the anaerobic component to exercise are available.

METHODOLOGY

Subjects and Variables

The purpose of the study was to investigate the effect of short term preseason training programme on aerobic and anaerobic power among hockey players. Forty hockey players selected as a subjects from the Department of Physical Education and Sports Sciences, Annamalai University. The age, height and weight of the subjects ranged from 18 to 24 years, 160 to 171 centimeters and 55 to 66 kilograms respectively. The selected subjects were randomly assigned into two equal groups of 20 subjects each. Short term aerobic and anaerobic training group – I, control group – II. The study was to investigate the effect of short term aerobic and anaerobic training among hockey players. One mile run/walk test was used to assess the aerobic power and Margaria – Kalamen Anerobic Power Test was used to assess the anaerobic power.

Training Protocol

The experimental group performed both the aerobic and anaerobic training programs three sessions per week on alternative days for 4 weeks. The anaerobic training program was a total body workout consisting of 3 sets of 6-10 repetitions on 8 exercises that trained all the major muscle groups. A percentage of each subject's one-repetition maximum for each exercise was used to determine the intensity of each week. The intensity and number of repetitions performed for each exercise changed once in two weeks. The aerobic training consists of 20-40 minutes running 2-3 times per week with 65- 80% HRR. The running intensity was determined by a percentage of heart rate reserve (HRR). The duration of each session were increased once in two weeks as training progressed.

Experimental Design and Statistical Technique

The experimental design in this study was random group design involving 40 subjects. The subjects were divided at random in to two groups of twenty each. Both the groups selected from the same population. The collected data from the two groups prior to and post experimentation on selected dependent variables were statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA).

Results and discussion

AEROBIC POWER

The data collected before and after the experimental period on aerobic power of short term aerobic and anaerobic training group and control group were analysed and presented in table – I

Table - I

ANALYSIS OF COVARIANCE ON AEROBIC POWER OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental group	Control Group	SOV	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean SD	2472.75	2471.25	B	22.50	1	22.50	0.006
	62.64	59.82	W	14.2567.50	38	3751.77	
Post test Mean SD	2510.75	2471.75	B	15210.00	1	15210.00	5.25*
	55.28	52.27	W	109977.50	38	2894.14	
Adjusted Post test Mean	2510.48	2472.01	B	14791.68	1	14791.68	5.96*
			W	91704.88	37	2478.51	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 37 is 4.11 and degree of freedom 1 and 38 is 4.10.)

*Significant at .05 level of confidence

Table – I shows that the pre-test means and standard deviation on aerobic power of short term aerobic and anaerobic training group and control group are 2472.75 ± 62.64 and 2471.25 ± 59.82 respectively. The obtained 'F' ratio value is 0.006 of aerobic power was less than the required table value of 4.10 for the degrees of freedom 1 and 38 at 0.05 level of confidence.

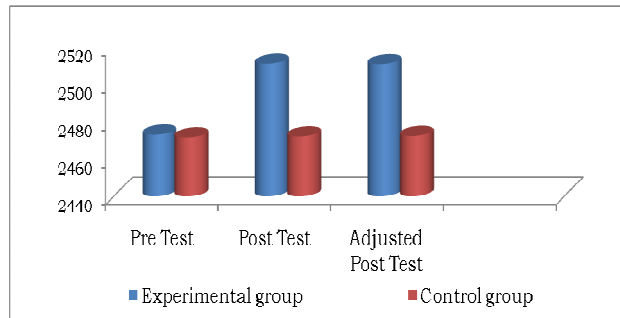
The post-test means and standard deviation on aerobic power of short term aerobic and anaerobic training group and control group are 2510.75 ± 55.28 and 2471.75 ± 52.27 respectively. The obtained 'F' ratio value is 5.25 of aerobic power was greater than the required table value of 4.10 for the degrees of freedom 1 and 38 at 0.05 level of confidence.

The adjusted post-test means on aerobic power of short term aerobic and anaerobic training group and control group are 2510.48 and 2472.01 respectively. The obtained 'F' ratio value is 5.96 of aerobic power was greater than the required table value of 4.11 for the degrees of freedom 1 and 37 at 0.05 level of confidence. Hence it was concluded that due to the effect of

four weeks of short term aerobic and anaerobic training the aerobic power of the subjects was significantly improved.

Figure – I

CYLINDER DIAGRAM SHOWING THE MEAN VALUE ON AEROBIC POWER OF EXPERIMENTAL AND CONTROL GROUPS



ANAEROBIC POWER

The data collected before and after the experimental period on anaerobic power of short term aerobic and anaerobic training group and control group were analysed and presented in table – II.

Table – II

ANALYSIS OF COVARIANCE ON ANAEROBIC POWER OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental group	Control Group	SOV	Sum Squares	of df	Mean squares	'F' ratio
Pre test Mean SD	122.10	121.85	B	0.62	1	0.62	0.14
	2.14	2.08	W	170.35	38	4.48	
Post test Mean SD	124.25	121.95	B	52.90	1	52.90	8.49*
	2.88	2.03	W	236.70	38	6.23	
Adjusted Post test Mean	124.20	121.99	B	48.33	1	48.33	8.48*
			W	210.85	37	5.69	

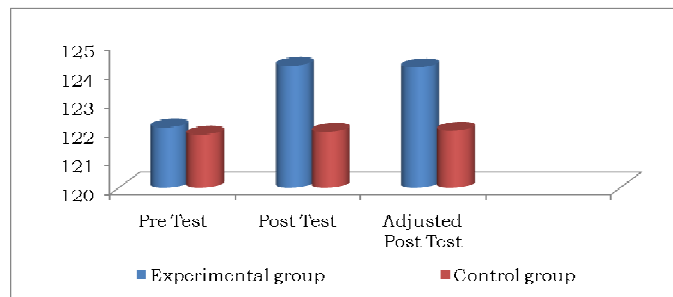
(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 37 is 4.11 and degree of freedom 1 and 38 is 4.10.)

*Significant at .05 level of confidence

Table – II shows that the pre-test means and standard deviation on anaerobic power of short term aerobic and anaerobic training group and control group are 122.10 ± 2.14 and 121.85 ± 2.08 respectively. The obtained 'F' ratio value is 0.14 of anaerobic power was less than the required table value of 4.10 for the degrees of freedom 1 and 38 at 0.05 level of confidence. The post-test means and standard deviation on anaerobic power of short term aerobic and anaerobic training group and control group are 124.25 ± 2.88 and 121.95 ± 2.03 respectively. The obtained 'F' ratio value is 8.49 of anaerobic power was greater than the required table value of 4.10 for the degrees of freedom 1 and 38 at 0.05 level of confidence.

The adjusted post-test means on anaerobic power of short term aerobic and anaerobic training group and control group are 124.20 and 121.99 respectively. The obtained 'F' ratio value is 8.48 of anaerobic power was greater than the required table value of 4.11 for the degrees of freedom 1 and 37 at 0.05 level of confidence. Hence it was concluded that due to the effect of four weeks of short term aerobic and anaerobic training the anaerobic power of the subjects was significantly improved.

Figure – II
CYLINDER DIAGRAM SHOWING THE MEAN VALUE ON ANAEROBIC POWER OF EXPERIMENTAL AND CONTROL GROUPS



CONCLUSIONS

Driller Matthew (2009) showed an 8.2 second improvement in 2000m rowing time following 4 weeks of HIIT in well-trained rowers. Kolata, Gina (2002) indicated that approximately 10% of aerobic power can improve by healthy individuals with short term exercise. The results of the study showed that the aerobic power have significantly improves due to the four weeks of short term preseason training programme for experimental group. Also the results of the study showed that the anaerobic power have significantly improves due to the four weeks of short term preseason training programme for experimental group.

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A Comparative Study among Cricketers and Athletes of Osmania University in Respect to Mental Health

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ABSTRACT:The study was conducted on 50 Cricketers and 50 Athletes of Osmania University. The purpose of the study was to find out the effect of mental health of Cricketers and Athletes. For this purpose C.G.Deshpande Mental health were used for the study. The Study shows Cricketers are having good mental health compare to athletes. It is recommended that psychological training must be given to cricketers and athletes.

Key Words: Cricketers, Athletes, Mental Health etc.

Introduction: Team dynamics:

Sport psychologists may do consulting work or conduct research with entire teams. This research focuses on team tendencies, issues, and beliefs at the group level, not at the individual level. Team cohesion can be defined as a group's tendency to stick together while pursuing its objectives. Team cohesion has two components: social cohesion (how well teammates like one another) and task cohesion (how well teammates work together to achieve their goal). Collective efficacy is a team's shared belief that they can or cannot accomplish a given task. In other words, this is the team's belief about the level of competency they have to perform a task. It is important to note that collective efficacy is an overall shared belief amongst team members and not merely the sum of individual self-efficacy beliefs. Leadership can be thought of as a behavioral process that influences team members towards achieving a common goal. Leadership in sports is pertinent because there are always leaders on a team (i.e., team captains, coaches, trainers). Research on leadership studies characteristics of effective leaders and leadership development.

Objective of the Study:

To find out the mental health among Cricketers and Athletes of Osmania University

Aim of the Study:

To See the mental health among Cricketers and Athletes of Osmania University.

Sample:For the present study 100 Sample were selected from Osmania University. The effective sample consisted of 100 subjects, 50 Cricketers and 50 Athletes those who have participated in the OU Cricket and Athletics coaching camp during the year 2011-12. The age range of subjects was 20-22 Years.

Tools

C.G.Deshpande Mental Health test:

C.G.Deshpande Mental Health test was used for measuring Mental Health. All the 50 items of the scale are presented in simple and brisk style. Each of the 40 item has two answer (multiple Choice) 'YES' and 'NO'

Procedures of data collection

One instrument could be administered individuals as well as a small group. While collecting the data for the study the later approaches was adopted. The subjects were called in a small group of 20 to 25 subjects and there seating arrangements was made in a classroom. Prior to administration of test, through informal talk appropriate rapport form. Following the instructions and procedure suggested by the author of the test. The test was administered and a field copy of test was collected. Following the same procedure, the whole data were collected.

Variable

Independent variable- Players a) Cricketers b) Athletes

Dependent Variable: 1. Mental health

Statistical analysis and discussion
Table No. 01

Mental health among team Cricketers and Athletes Mean S.D. and "t" Value.

Group	Mean	S.D	N	df	't'
Cricketers	42.09	4.20	50	98	8.51**
Athletes	37.53	3.73	50		

The Mean of Mental health score of the team game players Mean is 42.09 and that of the individual game players Mean is 37.53 The difference between the two mean is highly significant ('t'= 8.51, df =198, P < 0.01) It is clear that Cricketers and Athletes Differ Significantly From each other from the mean scores in table it was found that the Cricketers have Significantly good mental health than the athletes.

Conclusion:

Cricketers are have significant good mental health than the athletes.

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Differences In Self Esteem Body Image And Depression Between Obese And Non Obese Rural School Girls

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ABSTRACT

Self esteem, body image and depression plays an important role in managing one's body weight especially in school girls. This research work was carried out to identify the perception on different psychological parameters viz. Self esteem, body image and depression among obese and non obese school girls. Hundred obese school girls and hundred non obese school girls were selected from four rural schools from North 24 Parganas district in India as subjects. Rosenberg Self-Esteem scales (Rosenberg, 1965) for Self-Esteem; Children's Body Image Scale (Truby and Paxton, 2002) for body image and Major Depression Inventory (Psychiatric Research Unit, Hillerd and accepted by the WHO) questionnaire for Depression were used for collecting data. The means and standard deviation of different variables were calculated. The means of different variables were compared by using t-test. Statistical significance was tested at 0.05 level of confidence. The result of this research shows that there were significant differences in self-esteem, body image and depression between obese and non obese school girls. So that self esteem, body image and depression should also be given more attention in promoting healthy living style especially among school girls.

Key words: Obesity, Self-Esteem, body image, Depression, Rosenberg Self-Esteem scales, Children's Body Image Scale (CBIS), Major Depression Inventory (MDI).

INTRODUCTION

Obesity is currently one of the world's largest epidemics and is regarded as a serious health problem. The World Health Organization (WHO, 2008) defines Obesity as an excessive accumulation of body fat that occurs when energy intake exceeds energy expenditure. Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2). What is the BMI number that indicates you are obese? In people older than 20 years a BMI of greater than 30 is considered obese. But in children and teen between 2 and 20 years obese BMI number is not the same as in adults. Therefore, it is important to use a BMI calculator especially for kids, and to also use what is called the BMI percentile chart.

BMI less than 5th percentile: Underweight ,BMI between 5th and 85th percentile: Healthy Weight
BMI greater than 85th percentile: Overweight , BMI greater than 95th percentile: Overweight

World Health Organization predicts that 1 billion of the world population is overweight and 300 million of this number is said to be obese (WHO, 2005). Surprisingly half of these are among the population of Asia (WHO, 2005). With continuous economic development in big countries and densely populated countries in Asia like China and India, the number of obesity will increase (Pon et al, 2004).

Obesity has reached epidemic proportions in India in the 21st century, with morbid obesity affecting 5% of the country's population. India is following a trend of other developing countries that are steadily becoming more obese. Unhealthy, processed food has become much more accessible following India's continued integration in global food markets. Though the number of

obesity in India is less as compared to America and the other countries, but it is also a significant due to the sheer size of the population in India. With such large numbers, India has been requested to join the International Congress on Obesity (ICO) for further study on the risk and management of the overweight in a developing economy. With this, India would be one of the first nations from the developing countries in Asia to be put on the obesity map.

Obesity is increasing at an alarming rate throughout the world. It has now become a problem worth attention among both developed and developing countries. Obesity in all stages of life is thought to be the result of both genetic and environmental influences. There are a number of studies which indicate that overweight and obese children are more likely to have low self-concept and that they have higher rates of anxiety disorder, depression and psychopathology (Zametkin et al. 2004). It was also found that children whose self-esteem decreased were more likely to smoke and drink alcohol than children whose self-esteem increased or remained unchanged (Strauss 2000). The present study is an attempt to explore the association of obesity, self-esteem, body image and depression among school girls from a rural setting.

METHOD AND MATERIAL

Purpose of the Study:

The purpose of conducting the present study was to investigate there were any differences in self-esteem, body image and depression between obese and non obese rural school girls.

Hypothesis:

It was hypothesized that there would be significant differences in self-esteem, body image and depression of obese and non obese school girls.

Delimitation:

The study was delimited to the 100 obese 100 non obese school girls of North 24 Parganas, West Bengal.

Age of the subjects ranges from 10 to 12 years.

In this study Non obese school girls was delimited healthy school girls only.

Limitation:

The subjects of the study were from different socio-economic status and any influence of that condition on their response to questionnaire was not in control of the investigator.

The size of the sample was not large enough.

Education, heredity, mental growth and day by day activity of the subjects were also different and that was beyond control of the investigator.

Subjects:

For the present study 100 obese and 100 non obese rural school girls, ten to twelve (10 – 12) years age group, were selected from four rural Schools in North 24 Parganas district in India. The percentile value of Body Mass Index (BMI) of all the obese subjects was 95th to 100th percent and the percentile value of Body Mass Index (BMI) of all the non obese subjects was less than 95th percent.

Criterion measure:

In the present study followings were the criterion measures-

Body Mass Index, B.M.I. Percentile, Self-esteem, Body image, Depression

Investigating tools:

B.M.I.:

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 stadiometer as well by anthropometric rod. The measurement was taken in centimeter. The accuracy of measurement was up to 0.1 cm. BMI was computed by using the following standard equation:

$$B. M. I = \text{Body Mass in kilograms.} / (\text{Height in meters})^2$$

B. M. I. Percentile:

After BMI is calculated for children, the BMI number is plotted on the CDC BMI-for-age growth charts (for boys) to obtain a percentile ranking. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children. The percentile indicates the relative position of the child's BMI number among children of the same sex and age. The growth charts show the weight status categories used with children (underweight, healthy weight, overweight, and obese). BMI-for-age weight status categories and the corresponding percentiles are shown in the following table.

Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

Self-esteem:

The Rosenberg Self-esteem (RSE) scale developed by Rosenberg (1965) is a widely used self-esteem measurement developed by Rosenberg. The scale measures self-esteem, which is a positive evaluation of one's attributes and sense of self-worthiness. It consists of 10 items. Participants indicate their agreement-disagreement level for each item along a four point Likert type scale, ranging from "strongly agree" to "strongly disagree". Higher score in the scale indicate higher self-esteem. The maximum possible score of the scale is 3 and the minimum is 0.

Body Image:

Children's Body Image Scale (CBIS) developed by Truby and Paxton in 2002 was used for this study. Measuring children's body image was done by using a gender-appropriate scale. There were two versions of the scale, one for each gender. Here we used women versions of the scale. Each gender-specific scale has a set of pictures ranging from 1-7 according to increasing body size. The seven pictures represent different sized children according to their body mass index (BMI), like Picture-A, represented the subjects having BMI ranged from 13.0-13.5. Likewise, picture – B, C, D, E, F and G represents the subjects having BMI scale ranged from 13.6-14.9, 15.0-16.6, 16.7-17.7, 17.8-19.4, 19.5-24.6, and 24.7-28.5 respectively. To measure body image, researcher looked at the child and circled the picture as they felt best represented the child (actual body image). Then the subjects were asked to choose which figure they felt best represented them (perceived body image). According to Truby and Paxton (2002), the difference between the actual minus perceived body image represents their body image perception.

Depression: The Major Depression Inventory (MDI) scale was developed by Psychiatric Research Unit, Hillerd and accepted by the WHO. The scale measures depression, which is a positive evaluation of one's depression. As a severity measure, the MDI score ranges from 0 to 50, since each of the 10 items can be scored from 0 (at no time) to 5 (all the time). Again, for items 8 and 10, alternative at or b with the highest score is considered. Mild depression MDI total score of 20 to 24, Moderate depressions MDI total score of 25 to 29, severe depression MDI total score of 30 or more.

Statistical procedure:

To find out the mean difference of Obese and Non obese school girls the statistic of t- test was used. For testing of the mean difference between the groups the level of significance was set at 0.05 level of confidence.

DATA PRESENTATION

TABLE 1

Mean and standard deviation of Obese and Non obese groupsOf different variables:

NAME OF THE GROUP	AGE(Year)	HEIGHT(cm.)	WEIGHT(kg)	BMI	B.M.I. Percentile
	MEAN ± S.D.	MEAN ± S.D.	MEAN ± S.D.	MEAN ± S.D.	MEAN ± S.D.
OBESE	10.81 ± 0.62	140.97 ± 8.27	52.07 ± 5.94	26.16 ± 1.47	96.63 ± 1.00
NON OBESE	10.92 ± 0.55	142.14 ± 5.39	38.19 ± 3.30	18.9 ± 0.65	71.00 ± 4.35

In the Table-1 the mean and standard deviation of different variables have been presented.

Table 2

SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO MEANS IN SELF-ESTEEM OF OBESE AND NON OBESE GROUPS

NAME OF THE GROUP	SELF-ESTEEM	Mean Difference	Standard Error	t- value
	MEAN ± S.D.	7.57	01.24	6.1 [*]
OBESE	13.5 ± 3.81			
NON OBESE	21.07 ± 2.85			

* Table value of 't' for df (198) at 0.05 level of confidence = 1.98

From table 2 it was evident that there was significant difference on self-esteem between obese and non obese group.

Table 3

SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO MEANS IN BODY IMAGE OF OBESE AND NON OBESE GROUPS

NAME OF THE GROUP	BODY IMAGE	Mean Difference	Standard Error	t- value
	MEAN ± S.D.	0.83	0.24	3.46 [*]
OBESE	1.33 ± 0.66			
NON OBESE	0.50 ± 1.11			

* Table value of 't' for df (198) at 0.05 level of confidence = 1.98

From table 3 it was evident that there was significant difference on body image between obese and non obese group.

Table 4

SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO MEANS IN DEPRESSION OF OBESE AND NON OBESE GROUPS

NAME OF THE GROUP	DEPRESSION		Mean Difference	Standard Error	t- value
	MEAN	S.D.	09.36	1.39	6.76 [*]
OBESE	29.43	±5.44			
NON OBESE	20.07	±3.68			

* Table value of 't' for df (198) at 0.05 level of confidence = 1.98

From table 4 it was evident that there was significant difference on depression between obese and non obese group.

Discussions, conclusion and recommendation:

The purpose of conducting the present study was to investigate there were any association in self-esteem, body image and depression between obese and non obese rural school girls. The results show that there were significance differences on self-esteem, body image and depression of obese and non obese rural school girls. Obesity was also associated with low self-esteem; those students who belong to obese group significantly suffer from low self-esteem according to the Rosenberg Self-Esteem (RSE) scales, which were used in this study. Obesity was associated with depression; those students who belong to obese group significantly suffer from depression according to the Major Depression Inventory (MDI) scale, which were used in this study. The possible explanations for these results are the fact that obese adolescents are being treated in a ridiculing and degrading way by their peers. Due to obesity a person can lose their confidence.

In conclusion, the preventive strategy in overcoming obesity among the youth and adolescent is important. However, weight control strategy and the correct education about Self esteem, healthy body image and depression are necessary in preventing eating problems which might occur

among female adolescents. The importance of physical activity and healthy eating habits should be given due attention not only to prevent obesity but also other eating disorder. For further studies, a more comprehensive research method should be adopted which include all factors including, energy intake, energy expenditure, weight management knowledge, dietary behaviors/practices and physical activity.

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A Comparative Study on Anxiety among Foot Ball and Net Ball Players of Osmania University

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INTRODUCTION:In the modern sports, psychological preparation of a team / individual is as important as teaching as the different skills of a game with scientific methods. Most of the coaches agree that the physical characteristics, skills and training of the players are extremely important, but they also feel that good mental and Psychological preparation for competition is a necessary component for success.

Anxiety invokes a feeling of fear or a perception of threat and which may be specific to & particular situation. Possible symptoms are nausea, loss of composure, reduced motor coordination and aggression. Potential stressors are the climate temperature / humidity, circadian body rhythms - maximum efforts is harder in the morning, jet-lag, playing environment - stadium, spectators, surface, game officials and finally stress created by opponents or between players and the coach. All of these influences on stress depend on the individual perception or inner experience of player.

Football refers to a number of sport that involve, to varying degrees, kicking a ball with the foot to score a goal. The most popular of these sports worldwide is association football, more commonly known as just "football" or "soccer." A game known as "football" was played in **Scotland** as early as the 15th century: it was prohibited by the Football Act 1424 and although the law fell into disuse it was not repealed until 1906. There is evidence for schoolboys playing a "football" ball game in Aberdeen in 1633 (some references cite 1636) which is notable as an early allusion to what some have considered to be passing the ball. The word "pass" in the most recent translation is derived from "huc percute" (strike it here) and later "repercute pilam" (strike the ball again) in the original Latin. It is not certain that the ball was being struck between members of the same team. The original word translated as "goal" is "metum", literally meaning the "pillar at each end of the circus course" in a Roman chariot race.

Netball is one of many sports that developed its unique form and structure from another, transplanted sport—in this case, from the United States to Great Britain—and then, as a result of that move, evolving into a significantly different sport. Netball was introduced to England in 1895 as the indoor game of basketball, which it greatly resembles, although a staccato game and a sport of stop, start, catch, and shoot compared to the all-action fluidity of basketball. Netball is an international sport, played by two teams of seven players and based on throwing and catching. Traditionally it is played by women but mixed and men's netball is becoming increasingly popular. The game consists of four quarters of 15 minutes each, with an interval of 3 minutes between the first/second and third/fourth quarters and an interval of 5 minutes at half time. Teams change end each quarter.

Method:

The sample for the present study is fifty Male Foot Ball Players and fifty Male Korf Ball Players those who have participated in the Osmania University Inter College Sports and games during the year 2011-12 between the age group of 19 to 21st Years. Sinha's Comprehensive Anxiety Test are used in the study. Each instrument was administered individuals as well as a small group. Prior to administration of test through informal talk was explained the subjects procedures of the test. Each instrument was administered individuals as well as a small group. While collecting the data for the study the later approaches were adopted.

The subjects were called in a small group of 20 to 25 subjects and their seating arrangements were made in a classroom. Prior to administration of test, through informal talk appropriate rapport was formed. Following the instructions and procedures suggested by the author of the tests, the tests were administered and a field copy of each test was collected. Following the same procedure, the whole data were collected.

Results:

This study shows that Football Players are having the low anxiety compare to Net Ball Players and their achievement is also high in sports and games.

Discussion:

Table -I

Anxiety of Football Players and Net Ball Players

Players	Mean	S.D.	SE	N	df	"t"
Football	38.60	3.95	0.56	50	98	6.02**
Net Ball	43.74	4.56	0.64	50		

In table – I it shows that Football players are having the 38.60 mean compare the Net Ball Players mean is 43.74, that means Football Players are having the less Anxiety compare to the NetBall Players.

Conclusion

It is concluded that Football are having the less Anxiety compare to the Net BallPlayers. The Football Players are extraverts and they are having the desire to excel in the competition compare to the Net Ball Players.

Recommendations: :

It is suggested that Football and Net Ball Players must be given Psychological training to improve their psychological variables to excel in the competition. Similar studies can be conducted on other sports and games.

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A Study on the effect of Fartlek training for development of endurance among Cross Country Runners of Osmania University

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Introduction: Endurance is the ability to exert itself and remain active for a long period of time, as well as its ability to resist, withstand, recover from, and have immunity to trauma, wounds, or fatigue. It is usually used in aerobic or anaerobic exercise. Endurance is the ability to do sports movements, with the desired quality and speed under the conditions of fatigue. The definition of 'long' varies according to the type of exertion - minutes for high intensity anaerobic exercise, hours or days for low intensity aerobic exercise. Endurance training is essential for a variety of endurance sports. A notable example is distance running events 800 metres upwards to marathon with the required degree of endurance training increasing with race distance. Two other popular examples are cycling and competitive swimming. Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. During aerobic (with oxygen) work, the body is working at a level that the demands for oxygen and fuel can be met by the body's intake. The only waste products formed are carbon-dioxide and water which are removed by sweating and breathing.

Fartlek, which means "speed play" in Swedish, is a training method that blends continuous training with interval training. The variable intensity and continuous nature of the exercise places stress on both the aerobic and anaerobic systems. It differs from traditional interval training in that it is unstructured; intensity and/or speed can be varied whenever the athlete wishes. Most fartlek sessions last a minimum of 45 minutes and can vary from aerobic walking to anaerobic sprinting. Fartlek training is generally associated with running, but can include almost any kind of exercise.

METHODOLOGY:

Aim: The Purpose of the present study to find out the effects of Fartlek training for development of Endurance among Osmania University athletes in India.

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

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 were recorded. The controlled group was given the general training. The 8 weeks training were given to Experimental Group which consists of Fartlek Training on alternate days.

The Cooper Test 12 Min Run is used to assess the aerobic endurance. To undertake this test you will require: 400 metre track, Stopwatch, Whistle and Technical Officials. This test requires the athlete to run as far as possible in 12 minutes. The athlete warms up for 10 minutes. The Technical Official gives the command "GO", starts the stopwatch and the athlete commences the test. The Tech. Official keeps the athlete informed of the remaining time at the end of each lap. The Technical Official blows the whistle when the 12 minutes has elapsed and records the distance covered by athlete. After eight weeks Trg. the Post Test were conducted experimental group and controlled group.

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 Of 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	3241.75	219.71	49.13	1.69453	38.00	0.10
Controlled Group	20	3143.50	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 Fartlek 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	3525.50	238.89	53.42	6.440721	38.00	0.00
Controlled Group	20	3105.00	167.87	37.54			

Table No.3 is showing the Pre-Test slight difference in performance of experimental and controlled group and in Post Test there is a vast difference in Performance of experimental and controlled. The Experimental group has improved a lot due to Fartlek Training upto 284 Meters between Pre Test to Post Test. Due to the General Training the Controlled Group Performance has reduced to 38 Meters between Pre Test to Post Test.

GROUP	Results of 12 min Cooper Test	Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. tailed
Experimental Group	Pre Test(Mtrs)	3241.75	20.00	219.71	49.13	-15.82	19.00	0.00
	Post Test(Mtrs)	3525.50	20.00	238.89	53.42			
Controlled Group	Pre Test(Mtrs)	3143.50	20.00	137.71	30.79	2.35	19.00	0.00
	Post Test(Mtrs)	3105.00	20.00	167.87	37.54			

CONCLUSIONS AND RECOMMENDATIONS:

Fartlek training improves Aerobic endurance, Vo2 Max, Cardio vascular capacity, increases human growth hormone production, improves heart efficiency, reduces insulin dependency, save times etc. The Fartlek training is excellent way to train in any sport to improve the performance.

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Benefits Of Yoga For College Students

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Abstract

Yoga is a science as well as an art of healthy living physically, mentally, morally and spiritually. It is not limited by race, age, sex, religion, cast or creed and can be practiced by those who want to have a more meaningful life. It is a 'science' which provides a logical step by step process for a new understanding of ourselves and of the universe around us. This study aims to discuss about yoga technology and how Yoga practice is benefited to the college students in many ways such as stress reduction, emotional wellness, flexibility, improve strength, enhancement of the immune system and improved balance and postural alignment. This study concludes that by practicing yoga, college students will improve their moods, strengthen their body, relieve stress and concentrate better and improve their academic performance.

INTRODUCTION :

Yoga is a 5000 years old science, derived from the Sanskrit root "Yujir Yogey" means to unite, to yoke, to join, to put together. Yoga is about developing harmony between mind and body. Yoga – is a "science of sciences" is too comprehensive in its nature and too profound in its scope of teachings to be fitted into the frame work of any particular philosophy, religion or belief, ancient or modern" (Taimni, 2005). The Ashtanga Yoga system to Sage Patanjali gives us a wonderful road map for exploring yoga (Phulgenda Sinha, 2001). In simple words, yoga is a fantastic system for physical, mental, emotional and spiritual health. Yoga is a science as well as an art of healthy living. It is not limited to by race, age, sex, religion, cast or creed and can be practiced by those who seek education for better living and those who wants to have a more meaningful life. Yoga is a not a religion. It's a philosophy of life based on certain psychological facts and it aims at the development of a perfect balance between the body and the mind that permits union with the divine i.e. perfect harmony between the individual and the cosmos. Many different interpretation of Yoga have been handed down over the centuries. One of the classic definitions of Yoga is "to be one with divine". It does not matter what name we use for the divine – God, Allah, Ishwara, etc. Anything that brings us closer to understand that there is a power higher and greater than ourselves is yoga. When we feel in harmony with that higher power that too is Yoga.

Branches of yoga :

There are four tranches of Yoga from which most other types of Yoga emerge.

Jnana Yoga : The path of wisdom. This Yama and Neyama and is the science of acquiring proper knowledge. One who seeks this Yoga through philosophy is called the Jnana – Yogi.

Bhati Yoga : The Yoga of universal love and affection, one who searches this union in love is a Bhakti yogi.

Karma Yoga : The yoga of selfless service over pratyahra and is the science of action. The worker is called as Karma Yogi.

Raja Yoga : The highest yoga is raja yoga. It covers Dharna, Dhyana and Samadhi and is the science of concentration and meditation. One who seeks this union through mysticism is called as Raja Yogi.

Swami Vivekananda has rightly explained about the four division of Yoga as follows : "To the worker", it is the union between men and the whole of humanity, To the mystic, between his lower and higher self. To the lover, union between himself and the God of love, and to the philosopher, it is union of all existence. This is what is meant by Yoga.

Benefits of Yoga :

Yoga can provide college students with many benefits such as stress reduction, emotional wellness, flexibility, improve strength, enhancement of the immune system, and improved balance and postural alignment. Yoga helps the students to listen to the subjects in the classes with no ill-will in the mind. Yoga exercises helps, the students to increase their innate talents. The present environment makes the students tense. Yoga releases them from this tension and enhances their memory. Yoga is indispensable for those who suffer from anxiety. It helps them to avoid anxiety as yoga creates a steady mental balance during exam times. It helps to reduce the tense status. Yoga mentally helps to develop one's individual potential. It further induces them to learn good activities. Differences between students are objectively classified. Yoga breeds gutsy students. Students are scared when they listen to c/o shocking news, when they face seminars, competitions and other problems, Yoga training comes to their rescue. Some are unable to take correct decisions to achieve their goal. They become mentally tired and feel disappointed, they are not able to perform normally. Yoga helps such people to regain their mental balance. Yoga helps the college students in many ways. They are :

1) Yoga improve concentration :

The meditative practice of yoga will improve the ability of college students to concentrate. Focusing on studying and ignoring distractions such as a television, conversation and loud music will, of course, result in better grades. According to a time magazine article, due to advanced brain scanning technology, researchers are beginning to show that meditation directly affects the structure and function of the brain – changing it in ways that seem to increase attention span, improve memory and sharpen focus. Richard Davidson, director of the laboratory of Affective Neuroscience at the university of Wisconsin, said, “Attention is the key to learning, and meditation helps you voluntarily regulate it”.

2) Yoga Enhances Mood :

Wellesley college faculty yoga specialists co-authored a study examining the psychological benefits of Yoga. The authors of the study found proof that yoga improves mood and decreases anxiety.

3) Yoga Strengthens the Body :

Another recent yoga study of college aged men and women (between 18 and 27 years of age). Who participated in two yoga sessions every week for eight weeks saw a 19% to 31% increase in arm strength and a 28% increase in leg strength.

4) Yoga Relieves stress :

According to some experts, stress is the trigger of ailments in people's physical, emotional and endocrinal systems. Practicing yoga is a great way to reduce stress caused by academic pressures. Yoga helps college students avoid stress – induced eating and it helps them to sleep better. It can give students a sense of balance and mental clarity.

Yoga Typology for the benefit for students :

Yoga practices, like Asanas (i.e. Postures), Pranayama (i.e. breathing practice intended to influence vital forces), Kriyas (cleaning processes), Mudras (i.e. certain interval attitudes) and bandhas (i.e. neuromuscular locks) are mostly taught as physical practices. While various meditation techniques work at the mental level, all these practices are intended to develop a certain type of awareness within oneself, which in turn brings about a change in emotional and visceral functions, and through them, a change in intellectual and somatic functions of individual takes place.

Yoga through its techniques of meditation, asana and pranayama fields a positive effect in the management of stress in adolescents. The processing of sensory information at the thalamic level is facilitated during the practice of pranayama and meditation. These two practice along with physical postures (asanas), cleaning practices, devotional sessions, and lectures on the theory and philosophy of yoga were focused to bring about an improvement in the steadiness of college students.

In one of the study, it is found that a 4 week program of yogasanas and meditation lowers the aggressive behavior of the students. Another study has reported that meditation : a: reduced problems related to maladaptive behaviors. b: increased emotional and physical health and psychological well – being c: reduced the frequency of thought d : reduced substance abuse and e : generally improved the quality of life. Transcendental meditation reduces stress and improves academic performance of the students. And the practice of Yoga brings improvements in competitive performance.

Conclusion :

Yoga, which is a way of life, is characterized by balance, health, harmony and bliss, Meditation, being part of Yoga, which is the seventh limb of Ashtanga Yoga – a state of alert rest as stated by Maharishi Mahesh Yogi, who founded a new technique of meditation, which is popularly known as transcendental meditation. The science of Yoga is a powerful stream of knowledge, which enables the practitioners to achieve radiant physical health, serene mind, continues spiritual uplift, and creates the ability for harmonious social living. Hence we may conclude that by practicing yoga, college students will improve their mood, strengthen their body, relieve stress and concentrate better. This will certainly help them to make the most of their college experience and also help them to achieve better academic performance.

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Motivation In Sports

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Introduction:

Motivation is thought to be a combination of the drive within us to achieve our aims and the outside factors which affect it. With this in mind, motivation has the following two forms, intrinsic motivation and extrinsic motivation.

Intrinsic motivation

This is motivation from within. A desire to perform well and succeed. The following will be true:

- 1.Desire to overcome the problem or task
- 2.Development of skills and habits to overcome that problem
3. Rehearsal of successful habits until they are perfect
4. A feeling of pride and enjoyment in performing the skill
- 5.Repeated goal setting in order to progress and maintain motivation
- 6.Goals must be all of the following in order to be attainable:
Smart ,Measurable ,Agreed , Realistic ,Time related ,Exciting and Recorded

Extrinsic motivation

Extrinsic motivation comes from a source outside of the performer. These are things which can encourage the athlete to perform and fall into two groups:

Tangible rewards: Physical rewards such as medals and money. These should be used sparingly with young athletes to avoid a situation where winning a prize is more important than competing well

Intangible rewards: Praise, recognition and achievements. These should be used on a regular basis to encourage the athlete to repeat the behaviour which earned the praise.

Anything a person does is driven by some certain desire to acquire a predetermined goal. Cognitive psychology theorists endeavor to study and to fully conceive the nature of motivation or desire. People do one thing in order to achieve a specific goal; however understanding that doing one thing is necessary to achieve another thing is insufficient for a person to start doing the "one thing". This fact leaves nothing else but to bring out the idea of desire. Therefore, the knowledge, or the cognition, about particular characteristics of actions and objects is required but is not enough to motivate a person to start doing relevant things. Another important component is person's personal desire coming from within a person; otherwise the nothing will be done

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A Comparative Study of agility among Kabaddi and Kho Kho Players of Nalgonda District

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Introduction:

Kabbadi derived from two words Kai means hand pidi means catch. Kabbadi is a South Asian team sport. In Two teams occupy opposite halves of a field and take turns sending a "raider" into the other half, in order to win points by tackling members of the opposing team; the raider then tries to return to his own half, holding his breath and chanting "kabaddi, kabaddi, kabaddi" during the whole raid. Raider must not cross the lobby unless he touches any of his uponent. If he does so then he will be declared as out. Kho Kho is an Indian and Pakistani sport played by teams of twelve players who try to avoid being touched by members of the opposing team, only 9 players of the team enter the field. Kho Kho and Kabaddi, in spite of popular misconception, are not the same. Each team consists of 12 Players but only 9 Players take the field. Kho kho playground is rectangular. It is 29 meters in length and 16 meters in width. There are two rectangles at the end. One side of the rectangle is 16 meter and the other side is 2.75 meters. In the middle of these two rectangles, there shall be two wooden poles. The central lane is 907.50 cm long and 30 cm X 30 cm on the lane.

Significance:

The present study will bring the true facts of the level of Speed and agility among Male Kabbadi and Male Kho Kho Players of Nalgonda District

Methodology:

The sample for the present study is Male Twenty Kabbadi and Male Twenty Kho Kho Players from Nalgonda District. The subjects of the study between the age group of 20 Years to 22 Years. The data will be collected separately from Kabbadi and Kho Kho Players. The Subjects will be tested in 50 m for speed and Shuttle Run.

Results:

his study shows that Kho Kho Players are having the good speed and agility compare to the kabbadi players.

Conclusions: It is concluded that due to the Kho Kho Players are having good Speed and agility compare to Kabbadi Players.

Suggestions: It is suggested that Kho Kho and Kabbadi Players must be given training for speed and agility for the development of their performance.

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Science of Sports Training, Hardayal Singh.
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A Comparative Study of Speed among Kabbadi and Volley Ball Players of Social Welfare Schools in Karimnagar District

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Introduction:

Speed is the performance prerequisite to do motor actions under given conditions in minimum of time. Speed is the quickness of movement of a limb, whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can be expressed as any one of, or combination of, the following: maximum speed, elastic strength (power) and speed endurance. Speed performances cannot be improved to considerable extent as is the case in strength and endurance. Speed performances appear in different form in various sports.

Methodology:

AIM: To find out the Speed between Male Kabaddi and Male Volley Ball Players of social welfare schools of Karimnagar.

SAMPLE: The sample for present study consists of 15 Male Kabaddi Players and 15 Male Volley Ball Players between the age group of 16 to 18 years of Karimnagar District.

TOOLS: 50 Meter Run is used to collect the data for speed.

PROCEDURE OF DATA COLLECTION: The Kabaddi and Volley Ball Players are made to run 50 Meters in each batch of two members. The timing is taken by the Qualified Officials.

Purpose: To measure the speed among the Kabbadi and Volley Ball Players.

Equipment:

Two stop watches or one with a split second timer.

Description:

It is preferable to administer this test to two players at a time. Both have to take standing start position behind the starting line. The starter will use the command on your marks and gun will be fired.

Rules:

The starter may take any position behind the starting line. On the command on your marks and gun fire the student runs as fast as he can across the finishing line. Do not slow up until you across the finish line. Then he may down slow gradually.

Scoring: The score is the elapsed time to the nearest tenth of a second between the starting signal and the instant the student crosses the finish line.

Results:

It was found Volley Ball Players are having good speed compare to Volley Ball Players.

Conclusions:

It is concluded that Volley Ball Players are having good speed compare to the Kabaddi Players. Speed Training must be given to all Volley Ball Players and Kabaddi Players to enhance the performance.

Recommendations:

The similar studies can be conducted on different sports and games.

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Science of Sports Training, Hardy Singh