International Journal of Advanced Research and Development
ISSN: 2455-4030, Impact Factor: (RJIF 5.24)
www.newresearchjournal.com/advanced
Volume 1; Issue 3; March 2016; Page No. 35-40

Effect of complex training with yoga practices on selected motor fitness variables and playing ability among kabaddi men players

Dr. Sudhakara Babu Mande

University College of Physical Education & Sports Sciences, Acharya Nagarjuna Nagarjuna University, Guntur, Andhra Pradesh, India

Abstract
The purpose of the study is to find out the effect of Complex training with yogic practices on selected motor fitness variables and playing ability among men Kabaddi players. To achieve this purpose of the study sixty male Kabaddi players were selected at random from in and around the Guntur district of Andhra Pradesh. The age, height and weight of selected subjected were ranged from 18 to 25 years, 165 to 170 cm and 55 to 65 kilogram respectively. The selected subjects were divided into three groups of twenty each at random. Group 'A' underwent complex training, Group 'B' underwent complex training with yogic practices for four session per week and Group 'C' acted as control group in which they did not undergo any special training programme apart from their regular programme of the curriculum. The data were obtained before the training periods (pretest) and after the 12 weeks of the training period (posttest). The data collected from experimental group 'A', group 'B' and control group prior to and after completion of the training period were statistically analysed for significant difference if any, by applying analysis of covariance (ANCOVA). All the data were analysed using computer with SPSS statistical package. The level of confidence was fixed at 0.05 level.

Keywords: Complex Training, Yogic Practices, Motor Fitness Variables, playing ability.

Introduction
Physical education is an educational process that aims at the human performance and enhancement of human development through the medium of physical activity selected to realize this outcome. Physical education is not only concerned with the physical outcomes that accrue from participation in activities but also disciplining the mind and spirit of an individual by learning and participation

Motor ability
Motor ability is an 'intermediate capacity' of an individual to perform many varied activities and is a basis factor referring particularly to types of behavioral changes which involve in all movements of the body such as running, jumping and throwing.
According to Mathews (1986), 'motor ability may be defined as the immediate capacity of an individual to perform many stunts or athletic events'.
"Motor ability indicates present athletic ability. It denotes the immediate state of the individual to perform a wide range of motor skills; ability is general and enduring"

Meaning of Physical Fitness
Gatchell (1977) most authors define 'physical fitness's the capacity to carry out every day activities without excessive fatigue and with enough energy in reserve for emergencies. Emphatically this definition is inadequate for a modern way of life. By such a definition almost anyone can classify himself as physically fit.
According to Clarke (1971) Physical fitness is the ability to carry out daily task with vigor and alertness without undue fatigue and ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies.

Importance of Physical Fitness
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 arises.
Physical fitness makes you feel mentally sharper, physically comfortable and more with your body and better able to cope with the demands that everyday life makes upon you.

Yoga
Yoga is a very discipline. It is recognized as one of the most important and valuable heritage of India. Today, the whole world is looking to yoga for the answer to various problems modern man facing. Yoga is the art of living and yogasana is a scientific procedure. This is the only exercise, which effects in most parts of the body. Yoga develops the personality of an individual, physically, mentally, morally and intellectually. Yoga is universal benefiting all people of all ages. The study of yoga is fascinating to those with philosophical mind and is defined as the "silencing of the mind's activities which leads to completed realization of the intrinsic nature of the Supreme Being"

Types of yoga
Various types of yoga benefit the human body and mind that is the physical, Mental and spiritual fit. While the ultimate goal of yoga is to the union of the body, mind, and soul, and there

are a different way to achieve this aim there are a different Eight types of yoga these are the. Bhakti yoga, Hatha yoga, Swarayoga, Asthanayoga, Mantrayoga, Raj yoga, Trantra yoga, Karma yoga.

Importance's of Yoga

- Helps in the rehabilitation of old and new injuries
- Cleanses and improves overall organ functioning
- Brings down stress and enhance power of relaxation
- Result in healthy, glowing, skin
- Intensifies tolerance to pain and enhancing mental clarity
- Boosting physical strength, stamina, and flexibility
- Booster functioning of the immune system
- Bestows peace of mind and more positive outlook to life
- Enhance posture and muscles tone
- Improve blood circulation
- Bestows greater power of concentration and self – control

Health benefit of yoga

Yoga is a both preventive and therapeutic benefit. It has been to both offer physical and mental to the body and mind.

The physical benefit of yoga to improve the flexibilities, muscles tone, joint mobility and correct posture and build muscles, improve muscular-skeletal coordination and it's also help to improve the shoulder and neck disease such as increase stamina, create balance, scoliosis and improved digestion, elimination Increase circulation system. Improve heart rate, and improves breathing disorder and after that reduced the decreased cholesterol and blood sugar and reduced the body weight. The mental benefit includes. It is increase the mental awareness, relive chronic strain refresh the body by reliving the muscle strain and relaxed the body and mind. Sharpness concentration free the sprit.

Complex Training

It is highly effective from physical training that combines both resistance strength training and plyometric explosive power training. The idea is to use the combination of resistance and plyometric exercise to superbly engage the nervous system and activates more fibers. Complex training describes a power-developing workouts were greeted with great acclaim as research indicated that they could significantly enhance fast twitch muscle fiber power and, therefore, dynamic sports performance. According to Beachle & Earle (1994) complex training is combination of high intensity resistance training followed by plyometrics. Ebban states that complex training alternates bio-mechanically similar high load weight training exercises with plyometric exercises. An example of complex training would include performing a set of squats followed by a set of jumps squats. The logic behind this pair of exercise is that the resistance work gets the nervous system in to full action so that type ll b fibers are available for the explosive exercise, hence a better training benefit of complex training program me can be used in the general, specific and competitive phase of training. Ebbon (2002) in his recent literature review has stated that complex training has investigated both the acuter and long term effects of this condition in approach. Complex training describes a power developing work out that combines weight and plyometeic exercises. About 10 years ago, these work outs were greeted with great acclaim as research indicated that they could significantly enhance fast twitch muscle fiber power and , therefore, dynamic sports performance. The two benefits from traditional; strength work are: increased neural activity and increased muscle mass (hypertrophy).

Kabaddi

A raider should keep the cant with kabaddi as the word for sounding. If he is not keeping the cant with kabaddi. He should be ordered back and warned by the umpire or referee and the opponents be given change to raider under such circumstance.

Statement of the Problem

The purpose of this study was to find out the "effect of complex training programme with yogic practices on selected motor fitness variables and playing ability among kabaddi men players".

The Objectives of the Study

1. To determine the effect of complex training on selected motor fitness and playing ability among Kabaddi men players.
2. To determine the effect of complex training with yogic practices on selected motor fitness variables and playing ability among Kabaddi men players.

Methodology

Methodology is a branch of logic concerned with the principles of reasoning. It is concerned with scientific and philosophical enquiry, through a particular science, a system of method. This helps a person involved in a process to set a definite procedure in investigating through and orderliness in action, through and handling of ideas. The selection of subjects, selection of variables, selection of test, instrument reliability, reliability of data, subject reliability, experimental design, pilot study, orientation of subjects, collection of data, test administration, training programme and statistical technique employed for analyzing the data have been described.

Selection of subject

The purpose of the study is to find out the effect of Complex training with yogic practices on selected motor fitness variables and playing ability among men Kabaddi players. To achieve this purpose of the study sixty male Kabaddi players were selected at random from in and around the Guntur district of Andhra Pradesh. The age, height and weight of selected subjected were ranged from 18 to 25 years, 165 to 170 cm and 55 to 65 kilogram respectively. The selected subjects were divided into three groups of twenty each at random. Group 'A' underwent complex training, Group 'B' underwent complex training with yogic practices for four session per week and Group 'C' acted as control group in which they did not undergo any special training programme apart from their regular programme of the curriculum. All the entire subject gave a written constant and no compulsion was made to take part in the training programme. A qualified physician examined the subjects and declared that they were medically and physically fit to participate in the training programme.

Selection of variables

The researcher had gone through the available literature and had discussion with various experts and his guide before arriving at a conclusion. The availability of the techniques, feasibility and reliability of the procedure and the outcome were extensively analysed and on the basis of the findings the problem was selected. After analyzing the various factor associated with the problem, certain variables were selected to test during the study.

Most scientific knowledge whether from experience or research aims at understanding and improving the effect of exercise on the body. Exercise is now the focus of sports science. Research from several sciences enriches the theory and methodology of training, which has become a science of its own.

The researcher and with the experts has selected the following variables as the dependent variables of this study.

Selection of Tests

A) Motor fitness variables

- Speed
- Agility

B) Playing ability

Criterion Measure

The present study was undertaken to assess the effects of complex training with yoga practice on selected motor fitness and playing ability such as Speed, agility, flexibility, explosive power, muscular endurance, coordination and over all playing ability of kabaddi players. The investigator analyzed various literatures and also consulted physical education professionals and then selected the following test items, which are standardized, ideal for the choosen subjects and most suitable for the purpose of the study, and it is presented in table-1

Table 1: Selection of the test and variables

Variables	Test	Unit of measures
Speed	50 yard dash	In seconds
Agility	Shuttle run	In seconds

Experimental Designs

The purpose of this study was to determine the effect of complex training and complex training with yogic practices on selected motor fitness variables and playing ability of kabaddi players. For This purpose sixty inter-collegiate kabbaddi players were selected at random taken as subject. They were assigned into three groups namely Group 'A' underwent complex training, Group 'B' underwent complex training with selected yogic exercises and Group 'C' acted as control group this group not involve any specific training programme other than their regular physical activities programme as per their college curriculum. The training were given four days per week for a period of 12 weeks. The data were obtained before the training periods (pretest) and after the 12 weeks of the training period (posttest).

Administration of test--50 yards dash
(Johnson and Nelson 1988)

Purpose:-The purpose of the 50 yards dash test was to determine the ability of the individual to cover the distance in the shortest period of time.

Equipments:-1/10 of second stop watch, whistle and a score sheet.

Procedure:-The subjects were instructed to sprint at their maximum speed from the starting line to finishing line, covering the distance of 50 yards by the shortest time possible. The subjects were asked to stand just behind the starting line. On the command 'Ready' study position was assumed behind the starting line and on the whistle, the subject's sprints sprinted to their maximum speed to cover the 50 yards.

Scoring:-The time was one tenth of a second between the standing signal and the instant at which the subject crossed the finishing line and no trial was given.

Agility--(Johnson and Nelson 1988)

Purpose:-The purpose of this test was to measure speed and change of direction (agility)

Equipment:-Two blocks of wood (2"x2"x4") a stop watch and marking powder. The subject should wear spikes or run bare foot.

Test Administration:- Two parallel lines are marked on the floor 10 yards apart or the width of the regular volleyball court be used for the test. The two wooden blocks are placed behind on of the lines. The subject is asked to start from behind the other line. On the signal ready Go, the timer starts the watch and the subject runs towards the blocks, picks-up one block, runs back to the starting line, places the block behind the starting line ,runs back and picks-up the second block is placed on the ground the timer stops the watch and records the time,

Scoring:-Two trails are allowed to each subject with some rest on between of the two trails is recorded to the nearest 10^{th} of a second as the score of the test item.

Statistical Procedures

The data collected from experimental group 'A', group 'B' and control group prior to and after completion of the training period were statistically analysed for significant difference if any, by applying analysis of covariance (ANCOVA).

The pre-test and post-test means of experimental group 'A', group 'B' and control groups were tested for significance by applying analysis of variance (ANOVA). After eliminating the influence of pretest, the adjusted post-test mean of experimental groups and the control groups were tested for significance by using analysis of covariance (ANCOVA). All the data were analysed using computer with SPSS statistical package. The level of confidence was fixed at 0.05 level, for significant as the number of subjects were limited and also because, the selected variables might fluctuate due to various extraneous factor as mentioned in the limitations. In addition to this Scheffe's post-hoc test was employed, when the F-ratio of the adjusted posttest mean was significant to find out the paired men difference, if any among the groups for each variables separately.

Analysis of Data and Results of the Study

Table 2: Analysis of covariance for pre-test and post test Data on speed of experimental groups and control group

	CTG	CTYG	CG	Sources of variance	Sum of square	df	Mean square	'F' ratio
Pre-test Mean	7.61	7.64	7.56	B	0.055	2	0.028	0.25
S.D.	0.374	0.325	0.276	w	6.137	57	0.108	
Post-test Mean	7.2690	7.2230	7.5775	B	1.486	2	0.743	16.93*
S.D.	0.171	0.150	0.281	W	2.502	57	0.044	
Adjusted Post-test Mean	7.26	7.20	7.59	B W	1.779 0.834	2 56	0.889 0.015	59.74*

*Significant at 0.05 level

(The table value required for significance at 0.05 level with df 2 and 57 and 2and 56 are 3.925)

Table 2 shows that the pre-test mean on Speed of Complex training t group, Complex training with yogic practices group and control group are 7.61, 7.64 and 7.56 respectively and the obtained' F' ratio is 0.25. Since the obtain F ratio for the pre-test mean on speed fail to reach the required table value of 3.925, It found to be insignificant at 0.05 level of confidence for 2, 57 degree of freedom.

The post-test means on speed of complex training, Complex training with yogic practices and control group are 7.26, 7.22 and 7.57 respectively the obtained 'F' ratio is 16.93. Since the obtained 'F' ratio for the post-test mean on speed is higher than the required table value of 3.92, it found to be significant at 0.05 level of confidence for 2, 57 degrees of freedom.

The adjusted post-test means on speed of complex training, Complex training with yogic practices and control group are 7.26, 7.20 and 7.59 respectively and the obtained 'F' ratio is 59.74. Since the obtained 'F' ratio for adjusted post-test means on speed is higher than the required table value of 3.925, it is found to be significant at 0.05 level of confidence for 2, 57 degrees of freedom. The result of the study indicate that there is statistically significant differences among adjusted post-test mean of complex training group, complex training with yogic practices group and control group on speed.

Therefore, it was concluded that there is significant difference among the adjusted post-test mean of complex training group, complex training with yogic practices group and control group on speed. To determine which of the paired mean had significant difference, the Scheffe's test was used as post-hoc test and the result are presented in the table-3

Table 3: The Scheffe's Test for the Differences between Paired Mean of Groups on Speed

CTG	CTYG	CG	MD	CI
7.26	7.20	-	0.059	0.108
7.26	-	7.59	0.334*	
-	7.20	7.59	0.393*	

*Significant at 0.05 level

The multiple mean comparison in the above table prove that there existed significant difference between the adjusted mean of the all the treatment groups. The complex training and Complex training with yogic practices group had better improvement when compared with control group. Further it also observed that the complex training with yogic practices group was significantly higher performance than the complex training group in respect of speed.

The pretest, posttest and adjusted posttest mean values of complex training group and complex training with yogic practices group and control groups on speed are graphically presented in figure 1.

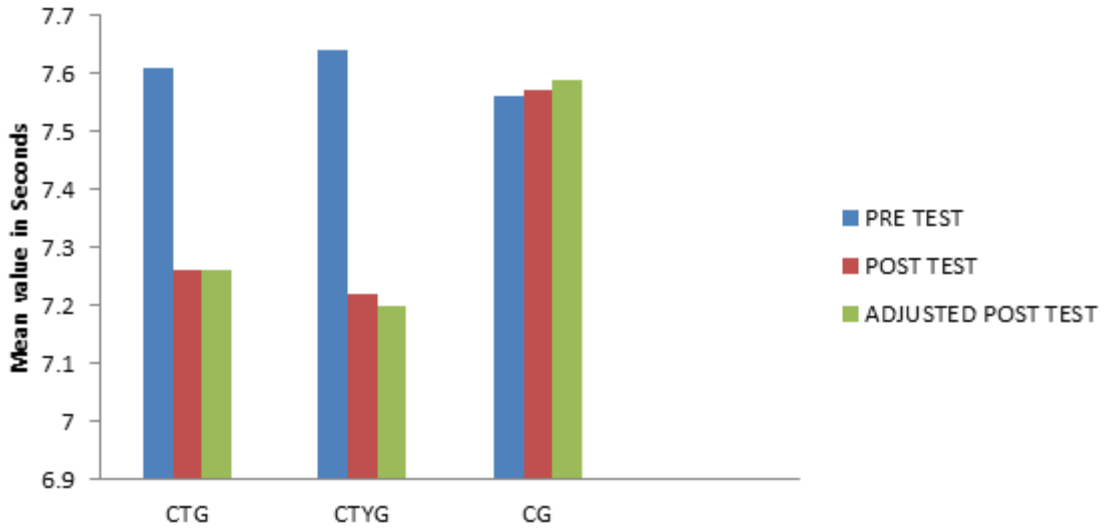

Fig 1: Bar diagram showing the pretest, posttest and adjusted Posttest mean of complex training group, complex training with yogic practice group and control group on Speed.

Table 4: Analysis of covariance for pre-test and post test Data on agility of experimental groups and control group

	CTG	CTYG	CG	Sources of variance	Sum of square	df	Mean square	'F' ratio
Pre-test Mean	10.32	10.41	10.30	B	0.134	2	0.067	0.519
S.D.	0.3383	0.339	0.396	w	7.356	57	0.129	
Post-test Mean	10.16	10.17	10.17	B	0.003	2	0.002	0.016
S.D.	0.238	0.308	0.399	W	5.914	57	0.104	
Adjusted Post-test Mean	10.17	10.12	10.21	B W	0.088 0.506	2 56	0.044 0.009	4.875*

*Significant at 0.05 level

(The table value required for significant at 0.05 level with df 2 and 57 and 2and 56 are 3.925)

Table 4 shows that the pre-test mean on agility of Complex training group, Complex training with yogic practices group and control group are 10.32, 10.41 and 10.30 respectively and the obtained' F' ratio is 0.519. Since the obtain F ratio for the pre-test mean on agility fail to reach the required table value of 3.925, It found to be insignificant at 0.05 level of confidence for 2, 57 degree of freedom.

The post-test means on agility of complex training, Complex training with yogic practices and control group are 10.16, 10.17 and 10.17 respectively the obtained 'F' ratio is 0.016. Since the obtained 'F' ratio for the post-test mean on agility is lesser than the required table value of 3.925, it found to be insignificant at 0.05 level of confidence for 2, 57 degrees of freedom. The adjusted post-test means on agility of complex training, Complex training with yogic practices and control group are 10.17, 10.12 and 10.12 respectively and the obtained 'F' ratio is 4.875. Since the obtained 'F' ratio for adjusted post-test means on agility is higher than the required table value of 3.925, it is found to be significant at 0.05 level of confidence for 2, 57 degrees of freedom. The result of the study indicate that there is statistically significant differences among adjusted post-test mean of complex training group, complex training with yogic practices group and control group on agility. Therefore, it was concluded that there is significant difference among the adjusted post-test mean of complex training group, complex training with yogic practices group and control group on agility. To determine which of the paired mean had significant difference, the Scheffe's test was used as post-hoc test and the result are presented in the table-5

Table 5: The Scheffe's Test for the Differences between Paired Mean of Groups on Agility

CTG	CTYG	CG	MD	CI
10.17	10.12	-	0.056	0.084
10.17	-	10.21	0.038	
-	10.12	10.21	0.094*	

*Significant at 0.05 level

The multiple mean comparison in the above table shows that there existed significant difference between the adjusted mean of the all the treatment groups. The complex training and Complex training with yogic practices group had better improvement when compared with control group. Further it

Also observed that the complex training with yogic practices group was significantly higher performance than the complex training group in respect of agility.

The pretest, posttest and adjusted posttest mean values of complex training group and complex training with yogic practices group and control groups on agility are graphically presented in figure 2

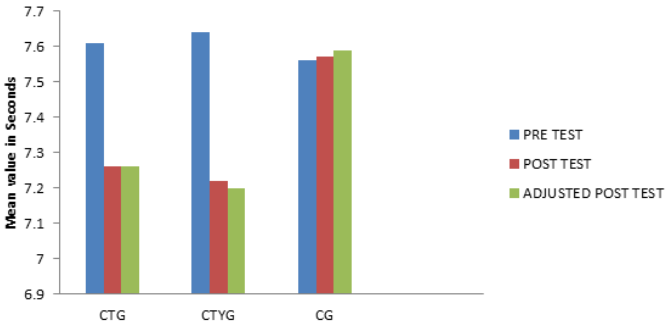

Fig 2: Bar diagram showing the pretest, posttest and adjusted Posttest mean of complex training group, complex training with yogic practice group and control group on agility.

Discussion on findings

The discussion on the results of the twelve weeks of complex training with yogic practices on selected motor fitness variables and playing ability are as follows.

Motor fitness

1. Speed

The result of study reveals that there is no significant difference between pretest experimental and control groups. But the twelve weeks of complex training and complex training with yogic practices showed a significant changes in the speed for posttest experimental group than control group. The above findings and observation made by the following studies conducted by Lloyd and Deutsch (2008) state complex training had significantly improved speed than the control group. It is the similar finding in this investigation also from Matthew *et al*, (2010) [1]. Reveal that complex training group has significantly improve speed than the control group. It is also similar finding from Alauddin (2009)

2. Agility

The result of the study reveals that there is no significant difference in agility in the pretest and the post test of the experimental and the control group. But there is significantly difference in the adjusted posttest mean due to the twelve weeks of the training programme. The results reveals are confirmative with the following findings of Croucher (2008) [4]. Stated that the complex training group had significantly improve agility than control group. It is also similar finding

from Jayaraman (2012) [3]. Srinivasan and Ramakrishnan (2013) [2]. Singh *et al*, (2012) [5].

Discursion on hypothesis

1. The first hypothesis says that that the influence of complex training on selected motor fitness variables such as speed, agility, flexibility explosive power, muscular endurance and coordination would be significantly differ when compared to the control group. The result of the study reveals that there are significant changes on selected motor fitness variables due to the experimental treatment when compared to the control group. Therefore the first hypothesis has been accepted, so null hypothesis has been rejected at 0.05 level of confidence.
2. The second hypothesis say that the influence of complex training on playing ability would be significantly differ when compared to the control group. The result reveals that there are significantly changes on playing ability due to the experimental treatment when compared to the control group. Therefore the second hypothesis has been accepted. So null hypothesis was rejected at 0.05 level of confidence.
3. The third hypothesis says that that the influence of complex training with yoga practice group on selected motor fitness variables such as speed, agility, flexibility explosive power, muscular endurance and coordination would be significantly differ when compared to the control group. The result of the study reveals that there are significant changes on selected motor fitness variables due to the experimental treatment when compared to the control group. Therefore the third hypothesis has been accepted, so null hypothesis has been rejected at 0.05 level of confidence.
4. The fourth hypothesis say that the influence of complex training with yoga practices on playing ability would be significantly differ when compared to the control group. The result reveals that there are significantly changes on playing ability due to the experimental treatment when compared to the control group. Therefore the fourth hypothesis has been accepted. So null hypothesis was rejected at 0.05 level of confidence.
5. The fifth hypothesis says that complex training with yoga practices group would be superior to the complex training group on selected motor fitness and playing ability. The results reveal that the complex training with yoga practice is better than complex training.

Conclusions

Based on the result of the study the following conclusion are drawn

1. The complex training group has significantly improved on speed, agility, flexibility, explosive power, muscular endurance, coordination and playing ability when compared with control group.
2. The complex training with yogic practices groups have significantly improved on speed, agility, flexibility, explosive power, muscular endurance, coordination and playing ability when compared with control group.
3. When compare between complex training and complex training with yogic practices. The complex training with yoga practice groups is better than complex training in relation to speed, agility, flexibility, explosive power, muscular endurance, coordination and playing ability.

References

1. Matthews M, Comfort P. Crebin Complex training in ice hockey the effects of a heavy resisted sprint on subsequent ice-hockey sprint performance. Research, 2010; 24(11):2883-2887.
2. Srinivasan, Ramakrishna. Effect of weight training and interval training on selected motor fitness and psychological variables of men handball players. Pesy Quarterly International Journal of Physical Education Sports Management and Yogic Sciences. 2013; 3(1):10-14.
3. Jayaraman. Effects of Different Depth of Aqua Training on Selected Physical Fitness Variables among College Men. Horizon Palaestra International Journal of Health, Sports and Physical Education. 2012; 1(2):67-71.
4. Croucher Paul E. Effects of an assisted jump training stimulus on explosive performance. Master's thesis, Wintec 2010.
5. Singh. Effect of Speed, Agility and Quickness (SAQ) Based Soccer Drill on Fitness and Skill Abilities of Football Players. Horizon Palaestra International Journal of Health, Sports and Physical Education. 2012; 1(2):43-48.
6. Allen Phillips D, James E, Horuak. Measurement and evaluation in physical education, New York: Hon Wiley and Sons, Inc, 1979.
7. Barrow Harold M, Rosemary Gree Mc. A practical approach to measurement in physical education (3rd ed.) Philadelphia, Complex Training Lea and Febiger, 1979.
8. Frank W, Dick. Sports Training Principles, London: The A & C Black Publishers Ltd, 1980, 189.
9. Grosset Dunlop. Enjoying Track and Field Sports, London: Paddington Press Ltd, 1979, 82.
10. Haerricecil F. Wyed Eric, Patride H. Wenstar UIniversal Dictionary Bombay, the Tulsisash Enterprise, 1970, 712.
11. Hardayal Singh. Science of Sports Training, New Delhi: D.V.S. Publications, 1991, 2.