‘’EFFECT OF WEIGHT TRAINING PROGRAMME ON SELECTED PHYSICAL FITNEES VARIABLES, RAIDING AND BLOCKING SKILLS OF MALE KABADDI PLAYERS OF SWAMI RAMANAND TIRTH MARATHWADA UNIVERSITY NANDED’’

A Thesis

Research scholar

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From 2010 to 2015

DECLARATION

I Declare that the present work completed in the from of thesis entitled **'EFFECT OF WEIGHT TRAINING PROGRAMME**

ON SELECTED PHYSICAL FITNEES VARIABLES,

RAIDING AND BLOCKING SKILLS OF MALE KABADDI

PLAYERS OF SWAMI RAMANAND TIRTH

MARATHWADA UNIVERSITY NANDED'' is an original work and has not been submitted or published in any form for the fulfillment of any other degree or any other similar to this or any other university.

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has been carried out by Mr. Manik Meharban Rathod from 2010 to 2015 The work included in this thesis is original unless stated other vice and has not been submitted for other degree of Swami Ramanand Marathwada University Nandeed or any other university References made to the work of other have been seated in the text.

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INTRODUCTION

1.1 History and Development of Kabaddi.

The origin of the game dates back to pre-historic times. The game was played all over the country in various forms. It was known as HU-TU-TU in Western India, HA-DO-DO in Eastern India and Bangladesh, Chedugudu in Southern India, Kaunbada and various other names in Northern India. Kabaddi may have been derived from the term 'Kaunbada' which means a challenge to the opponent. Some of the major forms of the game are Amar, Gemini, Sanjeevani and the game was played as per the situation with flexible rules. All these forms were synthesized to the present form of Kabaddi.

Maharashtra is the pioneer state to popularize this game and bring it to the national platform. It was only in 1918 that certain rules and regulations were laid down and efforts were made to give the game a National status. The rules and regulation were brought out in print for the first time in 1923 and an All India competition was conducted the same year at Baroda on the basis of these rules. The game received International exposure during the 1936 Olympic Games at Berlin when it was demonstrated by the Hanuman Vyayam Prasarak Mandal, Amravati, and it received good appreciation.

Kabaddi was introduced in the Indian Olympic Games at Calcutta in 1938. An All India Kabaddi Federation came into existence during 1950. Regular National Championships commenced from the year 1952. The first men's National was held in Madras and the first women's National was held in Calcutta in 1955. New rules were framed in 1954 at the National Championship held in New Delhi. Efforts were made to demonstrate the game in the World Youth Festival held at Moscow in 1957 but unfortunately due to various reasons this could not be accomplished.

The Indian university Sports Control Board included Kabaddi as one of the main sports disciplines in their curriculum during 1961. The School Games Federation of India included the discipline in the school games during 1962.

The Amateur Kabaddi Federation of India, a new body, came into existence in the year 1972 with the prime motive of organizing competitions at the National level and popularizing the game in the neighboring countries. Junior sections were also included in the national competitions.

The National Institute of Sports, the premier institute to develop to sports in the country included the game in the coaching curriculum with effect from 1971. Since then, qualified coaches are being produced every year, to train players at different levels in a systematic and scientific manner.

The Indian men's team toured Bangladesh in 1974 as a part of the Cultural Exchange Program and played test matches in different parts of the country. The Bangladesh team visited India in 1979 and played 5 test matches in our country.

The Asian Amateur Kabaddi Federation was formed in the year 1978, at Bhilai, on the occasion of the silver jubilee of National Championship in Kabaddi. The first Asian Championship was conducted in the year 1980 at Calcutta. In 1981, India men and women teams went on a goodwill tour of the Asian countries and played exhibition matches in Thailand, Japan, Malaysia etc in order to popularize the game abroad. Federation cup competitions for men and women commenced in the same year i.e., from 1978. In the IX Asian Games held at New Delhi, Kabaddi was included as a demonstration game. An open international tournament was conducted in Bombay in 1984. The game was included in the South Asian Federation Games held at Dhaka for the first time in 1985. On the occasion of the tri-centenary celebrations of the city of Calcutta, an International Invitation Kabaddi Tournament was organized at Calcutta.

Forms of Kabaddi

Gemini: [1]

This is a form of Kabaddi in which there were 9 players on each side. There was no fixed measurement of the ground which was prepared as per facilities available. The main characteristic of this form of Kabaddi was that the player who was put out used to remain out and would not be revived until all his team members were put out. The team which put out all the players of the opponent team secured a point which is similar to the present system of 'LONA'.

Kabaddi is basically an outdoor team game, played in the tropical countries of Asia. The indigenous game of India was adopted by other countries in Asia viz. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Maldives, and Malaysia and more recently by Japan and China.

The excitement and thrill provided by the game has made it very popular and Kabaddi is rightly called 'The Game of the masses', since spectators totally involve themselves and give the players a great deal of encouragement. The game requires no equipment whatsoever, and the rules of the game in rural areas, since rural youth in India can ill-afford the sophisticated equipment demanded by other sports.

The game demands agility, muscular co-ordination, breath holding capacity, quick responses and a great deal of presence of mind. Kabaddi was probably invented to develop defensive responses by an individual against group attacks and a group's responses to an individual attack.

This is the only combative sport in which offence is an individual effort whereas defense is a group effort. For an individual to face up to seven opponents and remain unscathed is no mean achievement. This calls for tremendous fitness of body and mind and the ability to concentrate as well as anticipate the opponent's moves. This can only be achieved with a lot of tactical preparation and maneuvering.

Kabaddi has also been related to Yoga, since 'Pranayama of Yoga, which means taking a deep breath and with-holding it plays a major role in Kabaddi

in the form of ‘CANT” Yoga is the means to control body and mind and has gained world-wide popularity. Yoga has become an essential part of the curriculum of sports and in almost every walk of life. ‘CANT”. Which has a relation to ‘Pranayama’ is the continuous utterance of the approved term ‘Kabaddi, while with-holding breath by the raider during the entire duration of his attack. Cant is the means by which internal organs are exercised by controlling breath as in Yoga together with physical activity as in any other sport. This is the only game which combines Yoga with vigorous physical activity.

Kabaddi believes in the maxim of a “strong mind in a strong body”. This inexpensive game should be given the maximum encouragement since it is well suited for developing countries to realize the underlying spirit of sports, which is health for all.

The game of Kabaddi is ancient and essentially of Indian origin. In Maharashtra this game is referred to as ‘HAMAMA’ played by Lord Krishna and his play-mates in Gokul. Sant Tukaram has mentioned this game in his Abhang and credited it with having a great bearing on one’s actions in everyday life. It is also referred to as ‘HOOMBRI’ which emphasis’s the importance of the Cant during the raids in the opponent’s court by the players.

The game of Kabaddi has since been played as a healthy pastime in India in one form or the other and governed by local unwritten rules or accepted norms. As such we find that the game is commonly known as Hu-tu-tu in Maharashtra, Madhya Pradesh and some parts of Gujrat. In Kutch and Kathiawad it was popularly known as BHADI BHADI. In Chennai (Tamil Nadu), Mysore (Karnataka) as CHEDU-GUDU, In Malabar and Kerala WANDIKALI, in U.P., Delhi, Lahore, Patiala, Peshawar, Rawalpindi, Rajasthan and the then Central Provinces and practically the whole of Northern India as KABADDI, in Punjab as ZABAR GANNA and in Bengal as HA-DU DU. The Jats from Patiala called this game SAUNCHI PAKKI and the Cant was either KIT-KIT or DU DU.

The cant which varied from place to place is the repeated audible utterance of the approved word or words within the course of one respiration. However, in the early days in Maharashtra particularly in the coastal areas one came across the following expressions as 'Cant' for the game of 'Hu-tu-tu', which does not strictly conform to the present definition of Cant.

i. 'Ha ghe Kapoos, tuza me bapoos'
ii. 'Hu-tu-tu lenga,Tabla bajenga'
iii. 'Kothambirchi Kadi, Tuzya bapachi Wadi'
iv. 'Hindustani bade Saitani'

The present day 'LONA' scored by a team when the entire side was put out was referred to as PALA in Maharashtra.

In Punjab the game Kabaddi was played by well-built people and considered to be the game of the strong and healthy folks only. The rich often offered a bait of money that used to be tied up to a pole, for the winning side.

By and large this game is played by the common man in almost all parts of India according to the rules evolved through experience. However, instances are not lacking where people still play the game as a pastime in a spirit of healthy rivalry exhibiting their skill as raiders and defenders of the side and without any limitations as to the number of participants on each side.

In Punjab and the old United Provinces the game was played with just a dividing line for the Courts. The Raider could be held by only one or two defenders. The last man was to be held by one man only and let off only on surrendering.

As time passed by, people took interest in this game of friendly attack and well-meant defense, as it helped to develop Team Spirit and afforded good exercise in the open.

The game is not only simple but inexpensive and can be played on a small patch of ground. It does not require any sophisticated gadgets or equipment. As an outdoor game it is dependent upon a activities arising out of inherent interest and the natural instinct of attack and self defense. In stimulates feelings of pleasure and through and through the exercise of skills provides thrill for the participants.

As a fair-weather game Kabaddi can be played on any ground that is sufficiently level, soft and free from stones or pebbles, to avoid injuries. In can also be played with equal ease as an indoor game on a court which is firm for foothold and is not slippery.

The natural activities of catching, pulling, pushing, throwing, running, jumping etc. which come instinctively to human beings are called into play in the game of Kabaddi. As several natural activities are grouped together, a pattern of co-ordination grows with practice and therefore certain norms or rules are evolved for naturalizing the activities governing the game so as to make it highly enjoyable.

We have, therefore a set of rules for the game, modified from time to time and enforced to suit the pattern and form in which the game is played in different parts of the country.

Three patterns of this game came to be known and followed by players were (i) Sanjivani (ii) Gemini and (iii) Amar.[2]

SANJIVANI: According to this form, when a player of the opposite side is Out, the Raider's side players who was Out earlier come to be revive. And when all the players of a side are out before the expiry of the 20 minutes session of the game, the other side scores 2 points. The game is played in two sessions of 20 minutes each with an interval or break of 5 minutes between the two sessions.

GEMINI: In this form of the game there is no revival of a player of either side once the player was out. The game ends as soon as all the players of either side are out.

AMAR: In this form of the game; no player is put out of play, but instead a point is awarded to the opponents for every player 'Out'. The game is governed by time, that is, it is over after a session of 20 minutes each with 5 minutes rest interval and the winners team is one which scores the highest number of points. The Team consists of nine players, and the field is rectangular.

Apart from these three forms there is yet another, in which the Team consisted of 8 to 10 players. One team remains within a marked area and the other outside that area. The outside team players are the Raiders. One Raider enters the arena with the Cant 'Kabaddi and tries to get an inside payer 'Out' by touching him. And it is only the player touched by the Raider who could hold him inside and not allows him to go out while he continues a fixed point and try to get as many opponents out as he could during the Cant. However, he is allowed to come out from any part of the arena or enclosure continuing his Cant. If he comes out successfully, the player scores a point or points for his side.

The game went through many changes as to its forming rules and the type and size of the Playfield or Court, before the adoption of the present form and standardized rules.

Incidentally this game is said to be the child of Wrestling as it involves the opponent's team or side. Dr. L. K. Govindrajloo is of the opinion that in the past this game was important for the development of war tactics as it involved a quick action of attack controlled and governed by a Cant during a respiration.

The game is particularly popular in Maharashtra, Andhra Pradesh, Gujarat and Madhya Pradesh. It is also popular in Pakistan, Sri Lanka, Burma, Nepal and many other parts of the country.

The game, known as Hututu in Maharashtra was encouraged in Satara way back in 1918. It was in 1919-20 that Sarva Shree D.R. Paranjpe, Yeshvantrao Pathak, S.C.Vaidya all residents of Satara and Shri K. Bendre from Pune, Championed the cause of Indian Games. They framed certain rules for Hu-tu-tu and introduced them in 1921 in Satara and Pune.Hu-tu-tu was played according to the rules then framed in two forms viz (i) Sanjivani and (ii) Gemini.

Strong efforts were made by Sarvashree Bhagwat, D.B.Potdar and T.B. Hardikar all of Deccan Gymkhana, Pune to popularize the game as the National Game.

In 1923 Hind Vijay Gymkhana, Baroda, appointed a special Committee to frame rules for this game. The same year, Hind Vijay Gymkhana organized an All India Tournament. Later as a result of practical experience these rules were amended during one of the Physical Education Conferences.

Eventually for the scientific development and promotion of the ideal HEALTHY MIND IN A HEALTHY BODY several physical Education and Sports Associations came into existence. Next to unify, co-ordinate and strengthen the physical education and recreation activities in India THE AKHIL BHARTIYA SHARIRIK SHIKSHAN MANDAL was formed when the All India Physical Education Conference was held at Amravati in 1946.

In fact the AKHIL MAHARASHTRA SHARIRIK SHIKSHAN MANDAL was already functioning in Maharashtra since 1927 for the promotion of Physical Education (The then Bombay State and Madhya Pradesh). There were other Association etc., but these restricted their

activities mainly to the organization of particular games and sports, Indigenous games were neglected and hence the need for organizing and developing them on scientific lines was strongly felt.

The Hanuman Vyayam Prasarak Mandal, Amravati, under the able leadership of Justice W. R. Puranik, brought about the formation of the AKHIL BHARATIYA SHARIRIK SHIKSHAN MANDAL. This Mandal through its provisional National Council of representatives from the various State Governments and prominent Physical Education Associations in India and an equally representative working Committee started its work in right earnest. The service rendered by it in the cause of indigenous games in particular and sports in general in this country is laudable.

Today almost all the States in India have their respective games and sports association. Most of the State has their Kabaddi Associations Organized of the principle of "One game one Federation", to control, promote and develop the technique and skills of the game.

In Maharashtra, "Hu-tu-tu" was quite popular among the masses but the game was rough and often ended in injures to players and in faction fights. State of the game had to be improved. Therefore, during the Fourth session of the Akhil Maharashtra Sharirik Shikshan Parsarak held in 1931, a Committee was appointed to study and revise the existing rules of the game. The revised rules were published in 1934. However, these had not yet been uniformly observed. The Deccan Gymkhana's rules for the indigenous game of Hu-tu-tu framed in 1928 were followed up to 1938.

In India during the years 1936-37, particularly in the then Bombay Province and Madhya Pradesh, the Gymnasia, Schools, Colleges and Physical Education Institutions organized Hu-tu-tu Tournaments, which undoubtedly created an atmosphere for the spread and development of the game in the villages. Likewise this helped to attract attention to the game in the cities. Independent Associations were formed at Nagpur, Akola,

Amravati, Baroda, Pune, Satara, Sangli, Miraj, Kolhapur, Solapur, Bombay and several other places and these organized Hu-tu-tu Tournaments are meant to popularize the game among the sports lovers.

In 1936, during the Berlin Olympics, the Hanuman Vyayam Prasarak Mandal, Amravati, sponsored a team to demonstrate among other games, 'Hu-tu-tu' to the foreign Nations. The game attracted their attention and as a result of this it general publicity it and caught the eye of the educated class.

The Indian Olympic Association for the first time, during the Indian Olympic Games held at Calcutta in 1938, included 'Kabaddi' (Hu-tu-tu) for demonstration. Soon thereafter in 1940 the Indian Olympic Association recognized this game and it was included in the Indian Olympic Games which were staged biennially. As a result there was hectic activity among the various. Provincial Olympic Associations. The Bombay and Suburbs Sharirik Shikshan Mandal was then entrusted the work of organizing Hu-tu-tu (Kabaddi) Tournaments in order to select a representative Team to participate in the Inter Provincial Hu-tu-tu (Kabaddi) Championships scheduled to be held at Calcutta in 1938.

Incidentally, the matches at the District and Provincial level were permitted to be played according to the Akhil Maharashtra Sharirik Mandal's Rules, but at the Inter Provincial championships, the Rules as per Buck's Rules of Games and Sports were followed.

At the end of 1939, The District and Provincial Hu-tu-tu (Kabaddi) Tournaments were organized in view of the IX Indian Olympic Games to be held in 1940. In Bombay. The Provincial Teams from Bengal, Rajputana Punjab, Bombay, Patiala, Madras, Central Province and Berar participated. Bombay won the Championship. Kolkata was Winners in 1938.

Although the game of Kabaddi (Hu-tu-tu) was played, and several Clubs and Sanghs came into prominence the disputes over the Rules were growing. The controversy was bitter particularly in the Bombay Province.

Provincial Hu-tu-tu Tournaments were organized during 1937 to 1943 according to the Akhil Maharashtra Sharirik Shikshan Mandal Hu-tu-tu Rules. The All India (Inter Provincial) Tournaments were, on the other hand, conducted according to Buck's Rules. The Deccan Gymkhana, Pune, Akhil Maharashtra Sharirik Shikshan Mandal and Buck's Rules the Team consisted for seven players and the Lobby did not exist. The length and breadth of the Court were greater and the Scissors hold was not allowed. Every Province played the game according to its own accepted rules. There was no compulsion to follow the Buck's Rules which underwent changes from time to time to suit the general requirements of the players.

The year 1945 heralded a period of progress. There was a split in Bombay's Hu-tu-tu Sanghs, and "The Bombay Presidency Hu-tu-tu Federation" was formed in 1945 to safeguard the interests of the various Hu-tu-tu clubs and to foster the game. No doubt, The Bombay Hu-tu-tu Madyawarti Mandal was formed ten years earlier with the same object in view but it did not function. It was the Mumbai Sharirik Shikshan Mandal formed in 1935 that first encouraged the Bombay Sanghs to participate in the Tournaments organized by other states. However, it must be said to the credit of Rashtriya Hututu Sangh, and Shivaji Sangh which included players of several disbanded Sanghs that Hu-tu-tu played on the sands of Choupati gained popularity.

Separate Federations for controlling different games were formed in due course as a result of the decentralization policy of the Indian Olympic Association. This step was in keeping with the principle 'One game One Federation' and it was found to be effective in standardizing the rules and conduct of the game of Kabaddi and putting it on a sound footing.

In 1946, on account of the pioneering efforts of the Bombay Presidency Hu-tu-tu Federation that "Kabaddi Championship for juniors" was introduced. The President of this Federation late Shri S.R.Bhoir through his valuable and generous donation of challenge trophies and Cups encouraged the game both at the State and national level.

The first attempt to popularize Kabaddi all over India was made by the then Bombay Province in 1946. In fact Bombay sponsored the idea by conducting the first the XIV Indian Olympic Games at the popular Beabourne Stadiaum in Bombay.

In 1952, the name of the Indian Olympic Games was changed to National Games and ever since these Game have been organized every year instead of every two years.

It was due to the untiring efforts of late Shri S.R.Bhoir (Bombay), Shri L.K.Godbole (Pune), Late Shri K.G.Nerurkar, Alias Bhai and Shri V.S.Kolgaolkar (Bombay) that a Kabaddi Federation was formed under the Presidentship of Shri L.K.Alias Babukaka Godbole of Pune. Later in 1952, the All Inda Kabaddi Federation was formed also under the Presidentship of Shri L.K.Alias, Babukaka Godbole and different State and Provincial Kabaddi Association came into being and was affiliated to the All India Kabaddi Federation recognized and affiliated to the Indian Olympic Association.

During the Kabaddi Nationals held at Madras in 1952, the then Office bearers gave a serious thought to standardizing the rules of the game. A rule Sub-Committee was appointed under the Chairmanship of Shri Sadabhau Godbole. A resolution was passed compiling all affiliated units to play the game strictly with a Cant of 'Kabaddi'. A demonstration of Women's Kabaddi was organized in 1953 by the Bombay Province hu-tu-tu Federation at Nagpur.

In 1955, during the Kabaddi Nationals held at Calcutta, Kabaddi Championship for women was included for exhibition but unfortunately our Team could not go. However Shri Datta Malap of Maharashtra (Shiram Sangh, Bombay) did attend the Youth Festival as an Observer.

With a view to standardizing the Rules of Kabaddi, amendments were first made in 1953 in the rules published by Mr. H .C. Buck, Founder Principal of the Y. M. C. A. College of Physical Education, Madras. The State/Provincial Kabaddi Associations were following their own rules for state Kabaddi Tournaments but for participation in the Nationals, Buck's rules of Kabaddi were being observed. From 1955 onwards the rules were modified in various parts of the country. The Federation, therefore. Prepared their own rules based on Buck's Rules, originally drafted following the rules of the game framed and adopted by Akhil Maharashtra Sharirik Shikshan Mandal, so as to establish uniformity and to ensure universal application of the rules. The rules of Kabaddi were next amended in 1960 during the Nationals at Vijayawada, in 1966, at Hyderabad, and lately in 1972 at Jaipur.

The game of Kabaddi as played today develops courage, fosters enterprise, formulates strategy, and success depends on good Team-work. It is now governed by and played according to the latest rules of the game as approved by the Amateur Kabaddi Federation of India.

1.2 General Introduction

Kabaddi is an ancient game played in India. Just like Abhimanyu entered in the Charavewya in the war of Mahabharata, and fought against seven warriors, a 'Raider' in Kabaddi enters in the opponent's field Chatting the approved world 'Kabaddi' in breath.

Same way, in the reign of Chhatrapati Shivaji Maharaja, his brave solders used guerilla tactics and won. Defense tactics in Kabaddi are same. Based on the above two principles this game has been developed in India[2]

In its unknown to most of the other countries that India has the oldest tradition of the game 'Kabaddi'. There are no sources to trace the origin of this game. But the evidence lends us to believe that game is as old as four thus and year and they even say, Lord Krishna has played this game. This game was being played in past in three different ways. The rules were more or less than the same:[3]

It consists of 12 players, but only seven players can play at a time, and continue throughout a game and unless there is need for substitution on account of injury. At the beginning of the second half of the tame two substitutions may be made.

Kabaddi is a game of attack through alternative raid into the opponents court, the raider having to complete the raid during period of a Cant, continuously uttering of word 'Kabaddi' without losing breath. The defending players are called antis. A raider may tag as many players of the defending team as he can in the process of the raid as long as he return safe that is without the raid riding Cant to his own side of the court.

To counter movement of the raider the antis endeavor should be to capture the raider and hold him on to their own side of the court till the cant ceases. If the raider who is caught touches with any part of his person his own court, all the aunties, who had held him or those he had touched, will be counted out. A raider who loses cant in the opponent's court, for any reason will be declared out.[4]

The game involves speedy movement accompanied by a great deal of bending, dodging, quick turns an kicks and twists; these apart the participant in Kabaddi requires considerable muscular strength either to catch hold of opponents or to resist the hold of opponents and escape from the aunties. The skill involved in these movements have to be understood and carefully practiced over long period, as in any other well organized game in order that participants may not only play better but derive satisfaction in plying Kabaddi.[5]

In order to execute better skills the Kabaddi players have performed considerable endurance, strength, power, speed and agility and for this weight training exercises may be essentially used.

1.3 Concept of Weight Training

Weight Training increases Strength, explosive power flexibility and decreases stress the components of a fit body are strength, suppleness and endurance. The body has a great deal of physical potential and a combination of mental and physical training can prepare the body to an extent and normal capability. Almost every sport requires a certain amount of power Since Kabaddi is a body contact power sport, sport demands power and strength. A player is said to be in good form when be is able to use power effectively of explosive power, combined with skill. Weight training helps the player to realize his explosive strength or power. The greatest advantage of weight training is that specific muscle groups could be exercised to being out his leg muscles in foot work, Hurst etc. should go in for weight training for leg and calf muscles. The unique feature of weight training is the contact and precision which it permits.

The basic role of modern training method is to increase resistance gradually by means of exercises. Weight training involves the use of a muscle or group of muscles against a resistance which is represented by weight. The greater the resistance or weight, the greater is the muscular effort. (Bob Hills and George germ-working out with weights).

The player should always warm up before weight training as this will make his muscles pliant and receptive for the exercises to follow. In an exercise programme, the best judge to decide upon the correct amount of weight resistance is the body. The player should start with light weights and increase the poundage gradually. When the exercise gets easier, he has to increase the poundage.

There are various means of weight training i.e., a multi gym with different exercise stations, with free weight such as medicine balls, sandbags, dumb-bells or barbells of different poundage etc. The resistance is provided with by Hydraulic based equipments.

Where no equipment is available, weight training can also be carried out with the help of partner.

The most importance to be kept in view for weight training are.

- Proper warming up is required before commencing weight training exercises.
- Check your weight training set before use.
- Perform exercises slowly and smoothly.
- Start with lighter weights and gradually increase the poundage.
- Warm – down after a work out to get back to normal.
- Maintain the record or each training session.

Since Kabaddi is a game of body contact, resistance power is to be developed in the players. When there is given with the help of partners, elastic bands, running against a strong wind, playing on a sea beach, running in slow water etc. Isometric and ISO Kinetic exercises one best suited for developing strength.

Weight training is not only a fitness activity, but builds resistance to injury. This training is also used to help on injured sports person to recover from injury more quickly. Weight training strengthens the weakened injured muscles to their former state.

Weight training is concerned with improving the condition of the body in terms of strength, power, and endurance through the use of repetitive movements (or attempted movements in the case of isometric exercises) against a resisting load of some kind.

Weight training physically improves the muscles involved and the body builder exploits this by using weight training method in such a way that

they change the shape of his body, since he strives for certain desired proportions.

A weight lifter is a person whose sport is the competitive lifting of weights where the objective is to perform successfully, according to the relies, a single repetition with maximum poundage. The two main sports are Olympic weight lifting in which the required lifts are the dead power lifting sportsmen use weight training to help them gain strength, endurance, power and agility for their sports.

In developing weight-training programme for specific sports, to improve the strength and endurance of muscles and joints; coaches naturally borrowed principles and techniques developed successfully over the years by world class weight lifters. Today "explosive" throwing sports (e.g., shot put and discus), and jumping sports (e.g., volleyball, basketball, and high jump) use their own versions of weight training programs bases on the tried and true method of weight lifters. This is the best training for getting the large muscle groups moving at ever higher speed.

Weight training physically improves the muscles involved and the body builder exploits this by using weight training methods in such a way that they change the shape of his body, since he strives for certain desired proportions.

As an exercise, a weight-training programme considers several repetitions of a movement for example, pushing a barbell from the chest to overhead in the press exercise. At the end of a certain number, or set, of repetitions he will stop and rest for a few minutes.

The group or schedule, of different exercise the weight trainer performs during that session may include several of each exercise. In order to exercise many different muscle groups or to vary the benefits according to the rank and walks of the weight trainer's sport, he or she will also probably alter the schedule from session to session in a programme of weight training lasting

several week or month. According to Thomas, strength of the muscle is directly related to the area of its cross section, exercise may cause muscles to become larger, even double in size and consequently stronger by judicious training programme.

1.4 Concept of Exercise

Mackenzie[11] stated that "Exercise comprises of movements designed to act on the muscles the blood vessels, nervous system, skin and abdominal organs. Active exercise is done by person of average health and requires definite exertion of the will power, while passive exercise is restored for the cure and treatment of certain discuses that do not require any exertion of will power."

According to Mores House and Gross[12] exercise can be defined as a specific set of movements to achieve a specific goal.

Garry and Yankee[13] defined "Exercise as muscular movement or exercise is a physical activity that conditions the body through regular and continuous repetition of body movement over a specific time period at a specific speed of or for a particular effort."

1.5 Concept of Physical Fitness

Physical fitness is the riches possession of an individual because it cannot be purchased but can only be developed by regular participation in sports and physical education programme. Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue and to meet emergency situation. Physical fitness is a positive and dynamic quality extending on a continuum from death to abundant life. The definition given implies that physical fitness is more than not being sick or mere "being weak."[14]

We should also remember that physical fitness not only adds years to one's life but also life to one's years. Thus physical fitness is not a state for the young but it is for all ages. Physical fitness is the ability to carry out daily

tasks with vigor and alertness, without undue fatigue and with ample energy to engage in leisure pursuits and to meet emergency situations.[15]

The term physical fitness is somewhat exact in its meaning indicates according to Mathews,[16] specific component or organic ingredients of physical fitness component or organic ingredients of physical fitness like muscular strength, Muscular co-ordination any of which is essential for doing and work or playing games and sports is essential.

PHYSICAL FITNESS TRAINING[1]

Performance in any sports activity depends to a large extent on physical fitness. Sports trainers concentrate on improving the physical fitness and motor abilities of a player, i.e., speed, strength, endurance, flexibility. Improving the physical fitness of a player is also called conditioning. A sound conditioning programme forms the most important part of training any sports person. Conditioning or physical fitness is categorized into general and specific fitness. General fitness refers to the common qualities required for any sports person irrespective of the sport i.e., motor qualities such as strength, endurance, flexibility and coordination ability. Every sport demands motor abilities at various levels above the average. Specific fitness is achieved when a player acquires the required motor ability at the intensified level for the particular sport. For example, specific fitness in Kabaddi is with reference to strength, speed and co-ordination. A player must be physiologically and psychologically fit to make a good sports person. Physical fitness training will enable the player withstand the stress and strain of a competitive sport without adversely affecting him physiologically or psychologically. It is only with specific fitness that a player can perform the unusual movements which an average person [non sports

Perform. However, the basis of specific fitness lays in general fitness and the player has to improve both the categories of fitness to succeed.

The training programme must commence with physical exercises and activity, to develop endurance and strength which are the basic qualities required of a sports person. Thereafter, the training progresses to develop co-ordination, flexibility, speed and the skills of the game. The training programme is then devised to convert the general fitness to specific fitness with exercises resembling the movements required to be made in actual game situation.

Since individual motor abilities are not uniform, as far as possible, the training programme should be designed for each individual player as per the position of play he adopts in the defensive system or for a player who is the main raider of his team. The quality of the player's technical and tactical performance depends on fitness. The player needs to be fit to sustain the quality throughout the competition. A player without specific fitness may not be able to maintain quality of performance beyond a certain limit. He may display good quality in executing skills in the first phase of the competition whereas, this will gradually reduce in the remaining phases due to sack of fitness.

Fitness can be developed through cross country running, fatlike, Interval training, circuit training, Weight training, Resistance Training etc.

Warm-up

Warm-up is the physiological and psychological preparation of a player before the main event, which may be a competition or a training session. Only with warm-up can a player achieve the optimum physical and psychological condition to give his best performance. Warming-up can be achieved either by active or passive means. Massage, hot water bath or steam bath are the passive means while physical activity like walking, jogging, slow running, bending and stretching exercises constitute active warming-up. Passive warming up in itself is not sufficient to bring body heat to the level required. It is a well known fat that exercise tones up the muscles, increases flexibility by loosening the muscles and increases heart rate. Arteries and

capillaries open up to increase blood flow to the muscles for supply of the required nutrients. This intern activates the nervous system, reduces time for motor reaction and improves body co-ordination. Warming-up makes the player feel fresh, light and relaxed. A well prepared body is less prone to injuries than a stiff one. For performance in any sporting activity, great deal on a player during competition or a rigorous training session, a gradual transition form rest to activity is required. If a player does not warm up properly, the required amount of blood will not be supplied to the artery system in time, leaving him fatigued after the first burst of activity. His stiff muscles will also make him more prone to injuries.

Warm-up of the body musculature is like the turning on of ignition of a car engine, where gradual pressure is applied to the gas pedal until the car is ready to be put into gear. Like-wise, the human body must be activated gradually from rest so that it is tuned up for action.

Studies have revealed that warming-up has important psychological effect on players. Proper warming up reduces tension and channelizes nervous energy into the competition, and the player motivates himself to gear-up for the main event. According to Jerold S. Greenberg and David Parkman (Physical Fitness 1986), the player must enjoy the warming-up and exercise experience and believe in the benefits of warming-up. The player must guard against a warming-up session becoming too much of a ritual but adjust to changing conditions. Warming-up exercises must be simple so that the player does not have and particular physical or nervous exertion while performing them. Warming-up for top class players should be individual as far as possible.

Warming-up methods should be employed keeping in view the player's physical and nervous condition. A player must have a chance to relax between considered beneficial soon after warming-up and before the start of the competition. Care should however be taken to see that this rest is not for too long a period which will make the player warm down.

Types of warming-up

General warming-up

Warming-up is made up of two parts, i.e. General and specific warming-up. General warming up is for the total organism involving all parts of the body to loosen muscles. The methods used for general warming-up include jogging, slow running and callisthenic exercises for the neck, arms, shoulders, abdomen, legs and back, followed by stretching exercises which will limber up muscles of the body. Stretching not only loosens the muscles but strengthens the connecting tissues as well. The increased temperature through stretching exercises protects the muscle form tearing or injury during exercise. Gymnastics forms the most suitable warming-up exercise since the player will have to use his limbs to the fullest extent to perform them.

Specific Warming-up

Specific warming up is to prepare the player for the main task ahead. The selection of exercises should resemble the activity to be performed during the main part of the training session or the competition. With the warming-up the player should be able to adjust to specific contest requirements. As far as possible, match activities should be made a part of the specific warming-up programme. The more complex the skill to be used in the main activity, the more is the number of repetitions of techniques to be included in the specific warming-up.

In Kabaddi, specific warming-up must include drills for Defense and Offence, i.e., moves, footwork and holds in defense and raiding footwork and techniques in offence. It is important for the player to know the degree of warming up required producing his best competitive effort. In Kabaddi, raiders tend to lay more stress than what is enquired on specific training, while neglecting general warming-up, whereas defensive players give more importance to general warming-up compared to specific warming-up. It is the duty of the coach to bring about equilibrium between the Generaland Specific types of Warming-up, since both are equally important. Selected games could be used towards the end of the warming up session to make the exercise

entertaining and to boost the spirit of the players. The coach can give pep talks to the players as a part of the specific warming to motivate them psychologically.

1.6 Concept of Factors of Physical Fitness

1.6.1 Speed

Clarke[17] points out 'Speed' also depend upon strength. This is merely another way of saying that strong man can lift more rapidly than can a week one, or that the strength of motor limits the speed of an automobile other things being equal, the stronger the individual, the faster he can run.

The importance of strength in accelerating the limbs at high speed is well recognized and determines to a certain extent the speed of running. The above rationale suggests tat an increase in leg strength may have a beneficial effect upon speed. Such increased strength can be attained through properly administered programme of weight training.

1.6.2 Endurance

Endurance is a physiological condition manifested by the length of time an individual can persist or continue at a particular activity with out losing much of the form show at the beginning of the activity.[18]

Endurance for exhausting work depends mainly on the ability of the body to supply and use oxygen and to dispose of the rapidly mounting concentrations lactic acid and carbon dioxide. Turning for endurance results in an increased capillarization of the muscles, thus providing more channels for the delivery of oxygen and food and the removal of waste, distance runner and other participants in endurance type athletes do not posses the hypertrophied muscles typical of those engaged in activities requiring great strength. [19]

1.6.3 Agility

Agility is the ability to change direction quickly and to control body movements, skills, requiring rapid movement of the entire body, in different directions and in response to unexpected circumstances. In simple words we can say that agility is ability to change direction accurately and quickly while moving rapidly. In some activities the ability to stop and start and to change direction quickly is much more important that in others.[20]

In sports such as Kabaddi, basketball, badminton and tennis agility is the most important factor. This may be measured by such tests as the shuttle run and activities that require a quick change of direction.

The concepts of various factors stated above revealed that Kabaddi players need a well-balanced fitness and for maintaining the same proper weight-training programme is duly justified.

RAIDING SKILL[1]

Like any other combative sport, Kabaddi is a game of offence and defense. Raid is the offence part of the game. The main feature of the game is raiding on the opponent's court, alternatively by both the team players. The singularity of this game is that, the defense is done with team work, whereas attack is made by only one player against a team. This attack is known as a raid and is completely an individual effort. Offence is a sum total of raiding techniques and tactics, where footwork plays a major role. Since raid is a means to score more points, the offence part of the game is given prime importance in Kabaddi.

Raid is a continuous process since players from each court raid on the opposite court alternatively. If we have two team, Team. "A", and team "B", when a player of team "A" raids on team "B" becomes the defending team and vice-versa.

As per rules, raider is a player who enters the opposite court with CANT withholding his breath. Chanting of the approved word KABADDI-KABADDI-KABADDI continuously without break while withholding breath is what is known as "CANT". The objective of the raider, while in the

opponents, court is to touch as many antes as possible, without getting himself captured. The number of antes he touches either with hands or feet by employing various skills will earn his team a point each. Simply entering the opposite court with cant and returning to home court does not make the raid successful. To make a successful raid, the raider must enter the antis' court with cant and either cross the baulk-line or touch an anti before returning to home-court without breaching any rules of play.

MORE COACHING IN KABADDI

Raiding is the backbone of Kabaddi and raider is the principal player who plays the key role in winning a match. Though defense is an inseparable and equally important part of the game, the role of a raider holds more glamour with the spotlight on him. He is the one who attracts mass appeal or brick bats, the adulation or the scorn of the audience. His achievements get more limelight and are duly awarded unlike those of the defensive players. Most of the recognized state and National Awards such as the Arjun Award has through the years, been given to top class raiders. The reason for this is that the raider has the opportunity to display individual effort in scoring more points in a single raid. Whereas, the defender, who captures the raider, gets only one point. This explains why every coach endeavors to have the best raiders in his team.

A microscopic study of raid is required to analyses a good raider should have good footwork, skill, and tactics and counter action ability to extricate him from difficult situations. The combination of all these factors makes the player a top class raider. We shall now study the structure of a raid and the different steps associated with it for an easy understanding of the complexities to prepare a good raider. The constituents of a raid are illustrated in the figure given below.

(a) Considerations of a Ride

Preconsideration means planning the technique and strategy to be adopted by the raider before he enters into the opponent's court. This is nothing but a mental preparedness, keeping in view the positions of the defense players, number of players etc. To make his raid effective the raider has to keep the following points in mind before stating the raid.

i. Where to enter?
ii. Number of players in the opponent's court and players put out.
iii. Strong positions and abilities thereof.
iv. System of play adopted by defense.
v. Make a mental plan of the attack.
vi. Choose the target.
vii. Situation of the game.
viii. Number of unproductive raids.

- Entry into the opponent's court will affect the path of raid, distance to be covered and retreat to home court. As such the raider must choose the right place to make an entry.
- Kabaddi is a game in which, the defensive players keep on varying in number during course of play. At any given moment, there may be any number of antis from seven to one. The raider's attack should also very depend upon the number of players in the opponent's court. While keeping in view the number of antis the raider must likely to bring a strong anti and revive the defense system.
- The raider should know the abilities of the defensive players and the positions taken by them in order to either avoid them or counter act against their main skills.
- The raider must observe the system of play adopted by the defense. In the chain system, there are various types

of play depending upon the number of antis in the court. For example, with four antis in the court, the team may adopt 2-2 system or 1-2-1 system and the motives of the defenders before planning his raid. This is a vital preconsideration before a raid.

- Before starting any venture, one has to pre-plan and condition one's mind to adopt a certain strategy. So also, the raider must make a mental plan of the raid before embarking on it. A raid without prior planning may prove dangerous and cost the offensive system a point.
- The raider, while making a mental plan of his strategy, must also choose his target and direct his attack towards this target.
- The situation of the game relates to whether the offensive team is leading or otherwise. The raider, keeping in view the situation, must decide whether he has to play safe or score points and the time to be spent. Sometimes a successful raid will suffice, whereas, if the situation is critical, the raider may have to go in for an attack in order to try and score points. We shall study this aspect of the preconsiderations in depth in the next few chapters.
- As per the unproductive point rule recently introduced in the game, if a raider does not score any point in three successive raids, the opponent team scores a point. The raider must keep in mind the number of unproductive raids given away by his team before planning his raid.

Cant

One of the unique features of Kabaddi is the holding of breath by the raider during his attack. "CANT" is the term used for chanting the word KABADDI-

KABADDI, respectively, in one single expiration. The definition of cant, as per the Amateur Kabaddi Federation of India rules is "The repeated without break and at a stretch and clear utterance of the approved word "Kabaddi" with-in the course of one respiration shall be called a "CANT". In other words, cant can also be defined as the measurement of raid since the length of raid can be determined upon the duration of cant. Raid begins with cant and ends with stopping of cant, immaterial whether the raider reaches home court or not. If the raider stops his cant in the opponent's court, he will be declared out, even when he is not caught. As such, cant is the inseparable part of the raider and he must continue the utterance of the word KABADDI in one breath until he returns to home court, for a successful raid. Together with physical prowess, technical supremacy, a raider is handicapped if he does not maintain proper cant. Any break in cant, lack of clarity or change of the approved word may prove to be a detriment to the raider.

In no other game is the physical prowess measured along with vital capacity, i.e. respiration. The CANT in Kabaddi has a close relationship with Pranayama of yoga. Pranayama associates mental processes with respiration. It is a proven fact that Pranayama or taking deep breath and retaining it, helps in longevity, fact that Pranayama or taking deep breath and retaining it, helps in longevity, in keeping calm and in being good for the heart. Dr. Sundar Ram who has studied the cant and its implications, has brought out a paper which states that fast and shallow breathers are easily excitable whereas slow and deep breathers are calm and cool with a longer life span. He has made comparison of the life of the monkey compared to the monkey and the tortoise, are slower breathers than the monkey but faster breathers than the tortoise. Dr. Sundar Ram relates a sound mind to a sound CANT in Kabaddi. He concludes that, in Kabaddi, the internal organ, i.e. respiration, is exercised along with external organs resulting in a sound mind in a strong body which is the ultimate aim of sports.

The cant has a long history and was in use in various forms all over the country. While the cant was gudu - gudu in southern India, it was Hu-tu-tu in

Maharashtra and Hu-tu-tu and kith-kith in parts of eastern India. During the freedom movement, the names of our freedom fighters were also used as cant. All these forms were synthesized and the word KABADDI came into being which has been accepted by the entire country and abroad. The name of the game and that of the cant were synonymous, in its various forms, which in itself explain the importance of CANT.

Many physical educationists and experts have conducted several experiments on the relation of cont and its impact on a player. Tests conducted on Kabaddi and non-Kabaddi players have established the fact that Kabaddi players have more vital capacity than the non-Kabaddi players.

To improve vent and for holding breathe for a longer period, every Kabaddi player is advised to perform pranayama part of it is not being strictly followed. Players, coaches and officials are equally to blame for this. We now find players breaking cant tactically during raid following the single respiration rule. At the same time officials are not being strict in this regard. Owing to this taking breath between cants has become a common practice. This has also become one of the skills taught to a raider.

During various National championships, a study was made to measure the duration of the cant (used nowadays). The study revealed that in the men's section, the maximum number of raids taken in a match of 40 Mts. duration was 80 to 82 (with an average of 2.1 raids per minute). The average cant of the raider thus worked out to 30 seconds. In the women's section, the maximum number of raids taken in a match of 30 Mts. Duration was 130 to 105 (the average of 3.5 raids per minute). The average cant of a women raider lasted for 18 sec. This illustrates that the average duration of cant in men players is more than in women players.

This analysis will help a coach in deciding the number of raids which can be made and how each raid is to be utilized by his team. In the unproductive raid system of play, the duration of raid has become very important in crucial situations.

Entry

Entry into the opponent's court always depends upon:-

- The position of the raider when he plays in his team's defensive system.
- The side from which he starts his attack
- The direction in which he moves.

To take entry, the three zones are the right, left and the centre zone. Normally, the raider playing right corner position starts from right zone, the left corner player from the left zone and the centre chain players starts from the centre zone because they are the nearest starting points. But it need not be necessarily so. Some players prefer to start from a zone other than the one nearest, is not advocated since it takes up valuable time and may breach the rule which dictates that the raid must commence within 5 seconds of the opponent's raid. A raid which starts after 5 seconds will be treated as an unproductive raid. The raider must take care to start his cant before entering the opposite court. If he touches the opponent's court without cant, a late cant will be declared and the raid cancelled. Sometimes, raid is also used as a pursuit to touch the retreating raider of the opponent team. Here the entry has to be made very quickly without breaking any rules of play.

Setting and Path of Attack

Settling means getting set before an attack. After entering the opponent's court, the raider has to study the situation and decide upon the path of main attack. He chooses the target and accordingly plans a situation while getting set. If he does not settle, but charges blindly in the opponent's court, without analyzing the situation, chances of his getting caught are more. For example, in pursuit, the raider does not get set but goes after the retreating raider of the opponent's team, and is more often than not, caught by the defenders.

The raider has to plan his path of attack to reach the target. While setting his path, he must take care not to go deep into the opponent's court and also ensure that the antis do not surround him. Simultaneously, he must also plan his path of retreat to home court. He must invariably select a path to the centre line for retreat after attack for which he may choose to turn, go outside, or take a sideward movement.

Footwork

The movement made by the raider with his feet during course of raid is known as footwork. There are several factors influencing footwork, such as, the stance of the raider, body position, movement, speed, agility etc. raiding footwork are of different types like shuffling footwork, reverse step footwork, natural running footwork, leading leg footwork etc. Since footwork is the main feature of a raid, we have to study it thoroughly. A detailed study is made in the chapter on offence skills.

The ability to co-ordinate different muscles in order to perform a combination of specific movements smoothly and effectively is called skill.

Skill is that in which technique is applied automatically without conscious thought. The most important characteristic of skill is the execution of an exercise related to the concerned sport which results in good performance. Technique should be applied with dexterity, economy of movement and easily without any tension. Mastery over such techniques of the game is what is known as skill complete control over the techniques of the game is the basis for achieving top class performance.

In Kabaddi, the skills used by the raider are called offensive skills. The raider has to use his limbs in order to come in contact or touch the opponent, so as to score points. This is accomplished by leg touches such as toe-touch, foot touch, squat leg thrust, kicks etc, with lower extremities and various hand touches with upper extremities. Apart from these basic skills, the raider must also learn advanced skills like counter-action for escape from different holds.

Mastery over these offence techniques will make the player a skilful raider. We shall study each technique in detail with the associated training methods in the next few chapters.

Tactics

Without tactical approach, a raider will be unable to put into practice the various skills learnt by him. Tactics means exploiting a given situation or creating study tactics of a raider, separately. The raider, depending upon the game situation, may have to increase or decrease the tempo of the game. For this, he has to adopt either a passive raid or create a situation for struggle and aggressive raid. This involves tactical approach. Sometimes the raider may have to pass time without taking any risk, especially when his team is leading and the opponents are aggressive. To face this challenge, the raider cannot depend upon skills alone. Similarly, on other occasions, the raider may be put under pressure and may have to raid on the baulk line. To cross the baulk line and make the raid successful, the raider again requires tactical ability.

As per the rules of play, the final phase of a successful raid ends in the return of a raider to home court. This is called retreat. However good the raider is in his tactical approach, footwork etc; unless he returns to home court with cant and without breaching the rules of play, his raid will not be successful. While retreating, he should keep the following points in view.

1) He does not give room for pursuit.
2) He regains his defensive position quickly, before the opponent team's raider begins his raid. Unless he dose this, he may disrupt his team's defensive system. For example, when the raider assumes left corner position in his team's defensive system, but enters from the right, the opponent's raid may begin before he reaches his position, putting the defense in jeopardy.
3) To return to home court, the raider must pass through the mid-line only.

Keeping all these aspects in view, the raider has to plan his path of retreat, in advance before embarking on a raid.

FOOTWORK OF A RAIDER

Before learning any offence technique, it is important to understand various fundamental movements involved in a raid. These are basic moves essential for the effective execution of any technique and are known as FOOTWORK in Kabaddi. Raider is an individual player who attacks the opponent's team with an aim to score points by putting out as many of the defense players as possible. Defense is a team effort which covers the raider from different position by forming chains. Naturally, raider cannot stay put and attack in one position. To dislocate and confuse the defense players, the raider has to move quickly from one spot to the other during attack, while executing techniques and also to reach home court safely.

Footwork makes or mars a raider. With good footwork, a raider will be able to assess the situation quickly, plan his next move, escape injuries and will have the confidence to carry out the attack successfully. Footwork is involved in the manner in which the raider approaches his target and executes his skill. With footwork, the raider can create a struggle situation which will put the defenders in confusion. Footwork differs depending upon the technique to be utilized. It also differs from player to player depending upon body structure, weight, height, etc.

(a) Stance

Proper stance is a must for every raider through which he will be able to maintain balance during movement. Broadly speaking, there are two types of stance, i.e. parallel and diagonal.

Parallel stance means keeping the feet apart in a parallel position and evenly distributing body weight on both the feet, so that centre of gravity falls between the legs. This is a defensive stance of the raider, used mostly in the centre zone before an attack is made on corners. The parallel stance helps the

raider decide on the target, while keeping him in readiness to start the attack. This stance is used to make sideward movements while keeping him in a safe position. With this stance, a raider should not go deep into the anti's court because it will be difficult for him to change direction and move towards centre line.

Diagonal stance is also known as a boxer's stance. This is an aggressive stance where the raider keeps one leg (nearest to the anti) in front of the other. The body weight falls more on the front leg. This stance helps the raider move more quickly and reacts quickly. As such most touches are executed with this stance which is recommended because a raider will be able to change his direction without delay.

No raider should keep his feet close together in what is known as a "feet close stance" which will render him liable for a double knee hold or thigh hold.

(b) Body position

The typical body position advocated for good footwork is knees flexed and apart, head held high to keep all antis in the peripheral view, lean forward slightly with hands relaxed and elbows flexed slightly aside the chest, for easy reach. A stiff position will be a disadvantage for quick movements. As such, a raider should always be relaxed, alert and keep his upper body slightly bent towards the centre line.

(c) Movement Velocity

Movement velocity means, the ability to execute a motion with a high rate of speed. Velocity is measured by the time taken to complete the movement. Velocity is an essential part of a good raid, since only this will enable the raider change direction, attack on different defensive players, or escape from the clutches of the antis. Velocity in movement is not an isolated part of good footwork, but is to be taken in combination with agility, anticipation, orientation ability, experience, skill and tactical efficiency.

(d) Fake and Feint

Fake is a movement to deceive or elude the opponent. This is meant to create confusion among the defensive players and put them in a dilemma as to the raider's next move. This will give the raider an advantage over the opponents and enable him score points with surprise with surprise attacks. Good body co-ordination, supported by agility and reaction ability is a must for footwork of the raider. Fake is an inseparable and inter-related part of footwork. Simple footwork without feinting ability is not of much use to a raider. Feinting is done by swerving a part of his body in order to conceal his real intention.

(e) Pivot

Pivot is a sharp movement taken by the raider on his toes to change direction which is an integral part of footwork during the course of raid. To improve the ability to feign, a raider has to improve his pivoting ability.

(f) Sudden checks in speed

While velocity in movement is very important, it is also required for the raider to suddenly check his speed either to change technique, so as to prevent him from entering the lobbies which will make him out of bounds, or to suddenly turn back and escape to home court. His co-ordination and reaction ability will be put to test for checking his speed suddenly. To stop quickly, the raider has to change his centre of gravity by making a wide base.

(g) General and Specific Fitness

All the above factors are to be taken in conjunction with general and specific fitness. A raider is an individual who is required to have a high quality of fitness, both general and specific so as to have good footwork, and at the same time, sustain the quality since he is called upon to carry out intermittent attacks. Since raid is an individual effort, it demands a great deal of physical exertion by the raider. All his other qualities such as body co-ordination, stance, velocity of movement etc., will be of no avail, if his general fitness is not up to the mark.

We will be dealing with general and specific fitness and training methods to achieve the same in the forthcoming chapters.

Types of Raiding Foot-Work

(a) Leading Leg Raid

In this of raid, the raider keeps his nearest leg towards the antis as leading leg with the other leg in the rear. The entire moves are made in the same boxer stance without changing the leading leg, during attack. For example, if the raider is attacking from the left zone, on the right corner or cover, he will keep his right leg as leading leg and his left leg in the rear. The stance should be diagonal but not wide because a wide stance will reduce speed. While changing direction, natural or out-turn methods are advantageous. An occasional skip sideward while attacking on the centre zone to avoid the corner's reach, is advocated.

(b) Shuffling raid

The moves of the raider, his direction and reach are quite clear to the antis in the leading leg raid. Whereas in a shuffling leg raid, it is not easy for them to anticipate the raider's next move. Here the raider shuffles both his feet and suddenly attacks in any direction. This shuffling movement could be with alternate feet or on the spot, to mislead the defensive players. The shuffling raid is also used in combination with other types of raids. The raider must beware of double knee or double thigh holds during such a raid. On the spot's of feet without any aim, which many players indulge in is not advisable it causes unnecessary exertion and will bring down the quality of raid.

(c) Natural Method

This raid is carried out in a natural running movement. It involves a fast and aggressive style of footwork and enables the raider move from one zone to the other very quickly. Raiders with less body weight can use this method to advantage. However, care should be taken not to go out of bounds. For this, the raider should be able to change direction with sudden checks in speed, while chances to touch the opponents are more in such a raid, the raider must

look out for possible chain holds. This method is generally used for 2nd to 2nd attack.

(d) Reverse step raid

In the reverse step raid, the raider retrieves his attacking or leading leg immediately after each attack. The footwork here, unlike the natural method is not aggressive. The raider uses this style to keep him safe. Similar footwork is also used to change direction and also to counter act against individual holds by defensive players such as knee hold, thigh hold etc.

Changing direction during raid

A raider has to play in a very limited area without going out of bounds (6.25_X8 Mts. for men / 5.5_X6 m for women, excluding lobbies). It is impossible to complete a successful raid without changing direction. Once the raider reaches boundaries of the court, he has to check his speed and change direction to either restart his attack in a different direction or retreat. If he goes out of bounds without struggle, he will be declared out as per the rules of the game. Even in situations when he is able to touch an anti or when he is caught by the antis, he has to change direction towards mid-line and reach out to his home court. There are different methods which a raider could use for changing direction, depending on the footwork he is employing and other game situations.

Methods of changing direction

- Out turn method
- In-turn method
- Natural run method
- Side – ward skip method
- Reveres step method

(a) Out turn method

Raider should check his speed on the leading leg and pivot on his toes without taking his rear leg forward. His shoulders should point towards the

centre line and a reverse turn taken. This is known as out turn method and is applicable by raiders who raid form 2nd to 2nd or corner to corner.

(b) In-turn method

When the raider checks his speed on the wrong step or rear leg by putting it ahead of the leading leg to change direction, he has to use the In-turn method to avoid going into the lobbies. Here a raider takes a turn towards the end line and reverses his position. This method is useful for raiders who employ shuffling foot-work and attack on corner zones. This method could be used in the centre zone also, but attack is to be made on the corner only.

(c) Natural run method

During raid, the raider checks his speed on leading leg and keeps the rear leg towards mid-line without taking a pivot on toes, in the natural walking / running style to come out of the corner, or central zones. This method is useful for raiders who use the leading leg raid.

(d) Side-ward skip method

Sometimes, the raider has to make a sideward movement to come out of central zone if corner-chains are closing in, so as to change his direction towards the centre line. A skip is taken on parallel stance to restart to restart the attack. This method is used by raiders whose attack is mainly on the centre zone.

BASIC RAIDERS SKILLS

Hand – touch

Hand touch is a fundamental and the easiest skill which every raider applies in one or the other forms. To score or to put out the opponents, a raider has to use either hands or legs to touch the antis. Statistics of any championship show that most of the points scored by raiders are by Hand Touch only. Since hand touch is nothing but the raider extending his hand towards the nearest anti (target), and creating a struggle situation, it looks

quite simple. However even this skill requires proper practice and good reflexes. We find some raiders are good at footwork, but fail to give top class performance because they are poor in this skill.

The situations which require the application of the skill are:-

- When the players in the opponent's court are reduced to 3,4 or 5 defense will be on the end line. In such a situation, using lower limbs is a risk whereas hand-touch is the best method to score while ensuring the safety of the raider.
- When the chains are close, and covering area is less, it is advisable for the raider to use hand-touch instead of foot or toe-touch which may lead to thigh hold by the defense.
- Hand-touch is a major weapon when the defense is playing on the baulk line.
- While taking a sudden turn, the raider can apply hand-touch to advantage.
- Hand-touch could be applied at anytime, creating a fake situation.
- This skill could be combined with other techniques like leg thrusts, for better results.

Types of Hand-Touch

- Running Hand-Touch
- Stooping Hand-Touch
- Turning Hand-Touch
- Hopping Hand-Touch
- Fake and Touch

1. Running Hand Touch

Hand touch is applied in a natural running movement and a raider who is good at cross step or natural style raid can take advantage of this technique. Care must be taken that the raider does not enter the lobbies without struggle. A raider may be trapped with chain if he runs blindly. In the execution of this skill, the raider should attack the outer shoulder of the anti by keeping angular raid towards the mid-line. Once

the attack is over, the raider has to check his speed on leading leg and change direction towards the mid line. Corners and seconds are the best targets and this attack is advisable for raiders who play form second to second.

2. Stopping Hand Touch

Stopping Hand Touch as made on corners or covers by bending the body in that direction. When the raider plays at corner and charges at the nearest cover, it is advisable to lunge forward/sideward to cover the distance. By stooping forward, the raider can charge effectively, leaving the anti no chance to escape. This skill could be used towards the sides also, when the raider plays at deep corner. To execute this skill, the raider has to keep his shoulder line towards the other antis and bend his upper body sideward; Chances of thigh hold are more in this type of attack. Hence the raider has to observe the movements of the defense carefully before executing this skill.

3. Turning and Attack

Attack in one direction may not be effective always. A new situation is created, when the raider moving forward in one direction, suddenly takes a turn and attacks the second or corner in the reverse direction. This has to be a surprise attack and requires speed and agility in the raider. However, raider should not enter deep into the opponent's side since chances of waist hold, chain holds and thigh holds are possible. These surprise attacks could well prove to be a turning point for the team's success. But the raider should not use this tactic in each attack which will enable the antis anticipate the move and trap him easily. Lobby and attack. To avoid getting into the lobbies and for change of direction, hopping hand touch can be used. After touching the anti, during the hopping movement it is advisable for the raider to use the lobby to reach home court safely.

4. Hopping hand touch

This type of attack is best when the raider's target is corner zone. A hopping movement is taken to reduce the distance between

raider and the anti and also to avoid unnecessary stepping during the raid. Sometimes, the raider may go close to the lobby and attack. To avoid getting into the lobbies and for change of direction, hopping hand touch can be used. After touching the anti, during the hopping movement it is advisable for the raider to use the lobby to reach home court safely.

5. Fake and hand touch

Hand touch can be applied in any zone by creating a fake situation and in combination with other tactics. A successful fake can be created with the use of upper extremities (trunk, shoulders and hands). The raider should be agile and have good footwork to succeed in the execution of this skill.

Various Hand Movements during Attack

- Vertical/diagonal movement -on the covers and corners.
- Side-ward swing -on the wings and supporters.
- Side-ward to forward -on the chains in front.
- Side-ward to reverse -on the antis who cover form the rivers.

Toe Touch

Toe Touch is a widely accepted and recommended skill by experts because of its easy application. This offense skill is used by almost every raider. A raider can execute this skill even when he is at a considerable distance from the antis. When the bonus-line was in vogue, this skill was extremely popular and brought in the desired results.

During the course of a raid, the raider will have to move in different angles, according to the positions and moves of the antis. At the same time, in order to apply this skill, the raider requires to extend his leg suddenly towards the anti. The techniques for execution of this skill are as follows:

- Body weight should be on the rear leg for easy extension.
- Do not face the antis. Ensure that the shoulder line is towards the side-lines or mid-line.
- Keep the movement towards the mid-line.

- ❖ To maintain balance, keep the body in a crouch position and lean towards the mid-line.
- ❖ Extend all the joints (knee and ankle) in order to cover more distance and touch with the inner portion of the toe.
- ❖ Keep hands free with flexed elbows aside the chest to maintain balance and to defend self from the covers.

After executing this skill, the raider should immediately withdraw his leg as there are chances for a ankle hold by the antis. While withdrawing his leg, he should not take a wide step, which will check his speed.

1. Dragging back and toe-touch

   To cover the distance between the raider and anti, it is sometimes recommended for the raider to drag him back and apply toe-touch, especially when the raider wants to attack the corners from the mid-line. Jumping should be avoided in this action and friction should be maintained with the ground. A small skipping movement is also advisable.

2. Running Toe-Touch

   This type of toe-touch is applied at covers, seconds and corners in the course of a natural running movement. When the raider is playing from second to second, he can apply this skill on seconds and covers. Sometimes, a raider can suddenly turn and apply this skill on the corner in the same movement. A raider, who is good at shuffling leg raid or cross step, can use this technique effectively.

3. Taking one step back and Toe-Touch

   When the raider feels that he is raiding on the wrong step, he can change the step by bringing his leg back to reverse and execute this skill.

Foot-Touch

Foot-Touch is a basic offense skill by the raider. Today's toe touch is a moderate from of foot-touch. Both these skills are inter-related; application,

method and principles are the same in the execution of Toe-touch and Foot-touch. The major difference between these two skills is that in foot-touch, the raider tries to touch the antis with his complete foot whereas in Toe-touch, he uses only his toe to touch the opponents.

Raiders generally use foot-touch in the position between second and third to touch the corners or second man. During the execution of this skill, the raider drags his thrusting leg towards the antis which is known as a "SLIP" in Kabaddi. This slip helps the raider to cover to cover more area in the opponent's court and has an advantage over toe-touch.

This skill is recommended for women players instead of Toe-touch, since women have a bigger pelvic girdle and it is more difficult for them to maintain their balance, which is essential for executing toe-touch where as foot-touch is easy to apply and there is no fear of the raider losing her balance.

This skill is a combination of both toe-touch and foot-touch and is considered a sister skill to these two skill. Raiders having quick reaction ability can use this skill to advantage. Sudden leg thrust is applied by sliding the attacking leg from sideward to reverse or forward to sideward and making a second attack during the same execution. This is a surprise attack and is found to be very successful especially when the bonus line was in vogue. This skill is mainly used in double attack and can be used in combination with leg touches.

As the name indicates, this skill is applied in a squatting position. To apply this skill, the raider has to assume a squatting position and thrust his nearest leg towards the antis. The raider can apply this skill after giving feint to the front chains which will create a distance between the chains. This will ensure delay in cover when the raider assumes a squatting position. To execute this skill, the raider has to thrust his nearest leg towards the antis to the fullest extent. He should squat in such a way that his body weight falls on the rear foot. To maintain balance, it is advisable to take support of the ground with the hand. This will also prepare the raider to come out of the danger zone more

quickly. Earlier, raiders used to take the support of the ground with both hands, but according to latest technology, the support with the hand opposite to the thrusting leg is advocated. The raider's position should be in such a way that the upper body is inclined towards mid-line and the neck is held erect to observe the movements of the defense. On application of the quick leg thrust, the raider has to bring the thrusting leg towards the mid-line still taking support of the ground. This skill requires a high reaction ability and good agility of the part of the raider. Heavy and tall raiders may find it difficult to apply this skill to perfection. However this skill is recommended for short and slim raiders.

This skill can be used with the following two techniques:

- Fake and squat leg thrust
- Squat and double attack

Skill for Raider

"Kicking" is an important offence skill in the game of Kabaddi. This skill despite certain disadvantages is very useful in critical situation, and its study should not be ignored. While every raider (especially those with excess weight) may not be good at this skill, a coach should ensure that he has at least a couple of raiders good at it.

A kick is nothing but a thrust or blow in the air by the raider with his leg with the objective of touching an anti. The advantages of the application of the skill are as under.

- To maintain distance from the antis.
- Antis or chains behind the raider can be kept away.
- Confuse the defense and enable the raider make a sudden attack on the second man or covers.
- Can be used as a weapon when the defense is fielding on the baulk line.
- To feign and create confusion in the defense.

❖ It is a sure method to score when defense players are less.

Types of Kicks

- Back Kick
- Side Kick
- Curve kick/Roll kick

➢ **Back Kick**

Kicking the anti who comes behind the raider during the course of raid is known as back-kick. To execute this skill the leg is to be extended fully to cover more distance and make it more effective. The different forms of back-kick are.

1. Running back-kick
2. Standing back-kick
3. Fake and kick
4. Taking a turn and back-kick

➢ **Back kick time body position**

- Shoulder line should be towards the centre line.
- Upper-body to be in crouch position
- Nearest hand goes up slightly to maintain balance
- Rear leg flexed and toe towards mid-line
- Do not be rigid, relax.

➢ Side-Kick

Raiders who raid from second to second and attack the centre zone will find this skill the most suitable. The method of execution and principles are the same as in the case of back kick, the only difference is that the area to be covered is sideward. To execute this skill, the raider has to face the side lines and kick at the anti who is at his side. Side kick is a little difficult compared to back kick, but with proper stretching exercises and continuous practice, the strain/stress on the pelvic joint can be reduced considerably. While applying running side kick, it is advisable to flex the knee and thereafter thrust it to the fullest

extent to get better reach. This is a modified form of side kick to get better results in different game situations.

- **Curve-kick/ Roll-kick**

  Curve-kick is also called a roll kick since the leg lifted to kick at the antis takes a curve from back to side. This type of kick will enable the raider cover more area with his attacking leg. At the same time it enables him change his direction. This kick is mostly used in a running form. Raiders, who raid on the centre zone, use this skill to attack on corner zones with an intention to touch the antis as well as change their direction. Though this kick may not bring many points, it serves to develop fear among the opponents due to its powerful style. This skill was very effective on the bonus line compared to end line game.

Blocking SKILL

Blocking is a defensive skill used by covers and corners. Blocking is an act of creating a wall of obstruction in the path of the raider, so as to prevent his movement. The aim of blocking is not just to obstruct the path, but also to catch the raider. Though this skill is used by all defensive players, in one or the other forms, it is indispensable for covers since they act as the watch-dogs of the defensive system. While executing blocking, the defender can use two different stances.

1. Parallel stance
2. Diagonal stance

In both these stances, the feet are placed apart so as to maintain balance. Situation for blocking by cover/corner.

- When the raider is fully covered
- When the raider goes into deep corners
- When the raider attacks on the centre zone
- When the raider takes reverse turns and attacks.

Types of Blocking Skill

- ❖ Blocking the raider on the spot/ or with a small skipping movement.
- ❖ Running block
- ❖ Following Block

➢ **Blocking the raider on the spot/or with a small skip**

In the above situation, blockers should cover the raider's outer shoulder while moving close to the raider. He must trace the path of the raider for proper execution of the skill, for otherwise, the raider may escape through gaps. Anti should keep himself in a bending position having wide base ad more body weight on the leading leg. To move close to the attacking raider, and to withstand the force of the raider, anti should take a small skip towards the raider's path. While holding the raider, a wide stance is required to maintain balance.

Once the raider's path is completely obstructed, he must put both the palms below the arm pits of the raider to hold him at the sides. While holding the raider, the anti should flex his elbows to keep the raider close to his body. He should not keep the elbows open which will make the gap between the raider and blocker more, and create gaps, to hold properly. Fingers should be together and upper body should be kept erect to maintain balance, after the hold. To avoid injuries, head should be kept away from the raider. Care should be taken not to allow the raider to bend or turn to escape form the block. It is also advisable to take one or two steps inside after the blocking to change the direction of the raider or lift the raider with the help of supports.

➢ Running Block

Situation

a) When the raider does not attack the blocker but goes deep into the opposite side.
b) When the raider is attacking at one place only.
c) When there is less anti.
d) Before the raider settles for his attack.

The main aim of this type of blocking is to cover the distance and put the raider in an unexpected situation. This is a sudden or surprise attack on the raider. But anti should be able to maintain his position, path and balance, to become successful in this type of hold. This skill is more like an offensive skill than a defensive one. It is used when the opponents' team is leading and the raider is not playing an aggressive game.

Advantages

a) To cover the distance and reach the raider quickly.
b) Raider who is at a distance can also be trapped.
c) Can be used as a tactic before the raider starts his attack.
d) To make a surprise attack on the raider.
e) Supporting players can also use this skill as a tactic.
f) Can be used as supporting skill for individual holds.

In this type of block, anti moves behind the raider to block his path. The technique of following block has gained popularity in the modern game because of the raider's sudden attacks and reverses charging.

Situation

a) When the raider plays in the centre zone and tactic on the corners.
b) When the raider does not observe the antis who are behind him while attacking the front chains.
c) When the raider is making a running attack on any zone.

The only difference between the falling block and other types of blocks is that the obstruction is made by the blockier that follow the raider or come behind him. Where as in other types of blocks, the raider is able to see the antis who come in front of him. The mechanism of blocking, however, remains the same.

Advantages

a) Even a single player can use this skill when the chain I is not good a holds.

b) Because of this skill, raiders will be wary of going deep into the opponent's court to attack.
c) The tempo of the game can be changed suddenly by blocking one or two good raiders.
d) The skill can be used as a tactic.

Disadvantages

a) Chances for the raider to escape are more.
b) Sliding through counter skill by the raider is likely to create problems for the defense.
c) Anti may resort to pushing and commit a foul due to less covering.

Situation in which to apply:

i. When the raider attacks deep into corners directly.
ii. When the raider is attacking on the corner with leg touch.
iii. As a planned tactic on the baulk line game.

This combination is very effective when applied on raiders who play from 2nd to 2nd and raiders who use leg thrusts on the Inn's. The left or right Inn's will initiate the ankle hold while the corner goes in for blocking.

- Knee hold and blocking

This a combination applied by in and corner positions or centre man and cover positions. The main tactics of this combination is utilizing the passive player from main defense and make a surprise attack on the raider. The supporting player initiates a knee hold while the main defensive player gets in front of the raider and blocks his path.

- Following chain and Blocking

This tactic is used by the corner zones. When the raider makes a speedy attack and does not observe the antis behind him, he can be trapped with the combination of following chain and Blocking, very easily. The corner players on whom the attack is made should block the raider while the opposite corner players form a chain and

apply following chain hold from the raider's rear. With this the raider will have few chances to escape.

- Blocking and Thigh Hold.

  In this combination, centre man should to in for thigh hold while the cover applies blocking. When the raider attacks with any leg thrusts, the centre man, who is passive player will suddenly apply thigh hold on the same stance or by taking one step if required. Simultaneously, the cover should block the pate of the raider. In this tactic, centre man should be a little closer to the raider while moving towards the raider so that the raider is tempted to attack on him. Cover should not get close to raider, but should act as if he is out of reach.

1.7 Statement of the Problem

Being a popular sport, Kabaddi is played in India and in most of the Asian countries. Looking towards less financial involvement, this game is played by maximum population. Still our performance in International platform is not remarkable. The performance in other games like Cricket, Football, Volleyball, etc, has been improved remarkably on the basis of proper research. Very few research reports are available in the game 'Kabaddi'. However, no research-based information is available till-to-date on physical fitness of male Kabaddi players, specially, for the age group 18 to 23 years. Mathews[21] also suggested that weight training programme could be performed by male having age group 18 to 23 years without any harm. It was, therefore, thought desirable to undertake this study, **" EFFECTS OF WEIGHT TRAINING PROGRAMME ON SELECTED PHYSICAL FITNESS VARIABLES, RAIDING AND BLOCKING SKILLS OF MALE KABADDI PLAYERS" OF SHWAMI RAMANAND TIRTH MARATHWADA UNIVERSITY NANDED**

1.8 Objectives of the Study

2 The specific objective of the study was to determine whether weight-training programme can improve, muscular strength, muscular endurance, speed and agility of male Kabaddi players.

3 To study the performance of Kabaddi players in the pre and post training phase.

4 To evaluate the strength training program and to suggest remedies to improve it.

5 To understand the positive effects of weight training on Kabaddi players.

6 To study the performance of the Kabaddi players while various skills like raiding and blocking skills of the Kabaddi players.

7 To develop new strategies of training and improvement to the weight training of the Kabaddi players.

1.9 Hypothesis

The following hypothesis can be stated as below:

1. Kabaddi players undergo weight training programs with positive approach.
2. If various exercises are properly conducted, Kabaddi players can improve their performance.
3. Weight training stimulates Kabaddi players and improves their fitness.

1.10 Significance of the study

1. This research work may be highlight significance to improve competence and abilities of Kabaddi players.
2. The study may be useful for Kabaddi players on regional level in official area in which health care is not properly taken.
3. The remedies evolved through this work will be very much useful for local colleges and clubs for improvement of the health of the Kabaddi players.
4. The study may highlight the applicability of the weight training program in sports with special reference to Kabaddi.

5. The findings of the study may help the Kabaddi coaches, teachers of physical education of India to understand the role of weight training on physical fitness and shall remove the misconceptions about it.

1.11 Limitations

1. As the subjects belonging to various communities the related factors such as diet, daily routine life style etc. were different which could not be controlled
2. Unavailability of sophisticated labs for organization and evaluation of tests.
3. Sincere response of subjects is also a limitation.
4. No special motivational technique was applied to influence the performance of various tests.
    a) Inter collegiate Kabaddi players in S. R. T. M. U. Nanded.) As the subjects belonging to various communities the related factors such as diet, daily routine of life style etc. were different which could not be controlled.

c) This study is limited to swami Ramanand Teerth Marathawada university Nanded) The study will be conducted specially regarding the players who participate in Inter collegiate Kabaddi competitions among the age group of 18 to 23 year

1.12 Delimitations

a) Diet and rest of the children was a limitation.
b) The study is delimited to the male.
c) The study is further delimited to the age group between 18 to 23 years.
d) No special motivational technique was applied to influence the performance of various tests.
e) Bench press
f) Shoulder press
g) Half squat

h) Full squat

1.13 Definitions of the Terms

Speed, Endurance, Agility, Raiding, Blocking

Endurance: Muscular endurance refers to the ability of muscular to sustain an intensive contraction for many times without fatigue.

Speed: It is performance prerequisite to do motor action under given conditions (movement task, external , factors, individual, prerequisites) in minimum of time

Speed is the quickness with, which on is able to move his body from one point to another.

Agility: Agility may be defined as the ability to change direction accurately and quickly moving rapidly.

Raiding

Raid is the nucleus around which the entire game of Kabaddi revolves. Raid is at act on the opponents and the raid is made may number at any given situation from one to seven, since defense is a team effort in Kabaddi raid however, is charred out by a single player also called the raider ,

The raider shows his individual enter praise and skill in entering the opponents court, one against a team to score point by out witting the antis.

As per rules, raider is a player who enters the opposite court with CANT with holding his breath, chanting of the approved word Kabaddi Kabaddi continues without break while with holding breath is what is known as cant'

Raid is a continuous process since player from each court raid the opposite court alternatively.

If we have two teams “A” and team “B” when a player of team “A” raids on team “B” team becomes the defending team and vice-versa.

Blocking

Blocking is a defensive skill used by covers and corner blocking is an act of creating a wall of obstruction in the path of the raider, so as to prevent his movement, the aim of blocking is not just to obstruct the path, but also to catch the raider.

Though this skill is used by all defensive players, in on or the other forms, it is indispensable for covers since the act as the watch-dogs of the defensive system while executing blocking, the defender can use to different stances.

1.13 References

[1] P Prasad Rao, Shinde and Bhendiri, Adhunik and Shariya coaching in Kabaddi, p.1

[2] Prabhakar K. Walani, “Coaching Kabaddi:”, (Gubrat: Publication of Kabadi Association, 1971).p.1.

[3] E.P.Rao, "Modern coachng in Kabaddi", (New Delhi: D.V.S. Publications, 1994), P.2

[4] P.K. Walani, "Coaching in Kabaddi" (Gujrat: Publication of Kabadi Association, 1971), p.1-2.

[5] C.V. Rao, "Kabaddi", (N.I.S. Publication, 1971), p.8.

[6] Howard Poyne, "Weight training for all sports", (London, WC1B: Published in Great Britain by Psham Book Lttd, 44 Bedford Square, 1979), p.22.

[7] M. Webster, "Webster sports dictionery". (Massachusetts, U.S.A.: Marrain Webster Inc. Puhlishers Springfield, 1963), p.479.

[8] J. Zumercik. Ed. "Encyclopedia of sports science", (U.S.A.: Macmillan Library Reference, 1997), p.549.

[9] H.Payne, "Weight training for all sports", (London WCIB: Published in Great Britain by Pelham Book Ltd., 1979), p.2.

[10] J.P. Thomas, "Scientific weight training for sports and games", (Madras: Gnanoday a Press, 1965), p.21.

[11] T.E. Makenzie, "Exercise in education and medicine", (Phiadelphia: W.B. Saunders Company, 1924), p.27.

[12] L.E. Morehose and Gross, "Total fitness in 30 minutes a week". (Great Britain: Hat Devis; Macgibben Lt., 1976), p.27

[13] D. Garry and Yanker, "The complete book of exercise walking", (Chicago: Contemporary Book, 1983), p.82.

[14] H.M.Barrow, "Man and movemnent", (Philadephia: Lea and Febiger, 1977) pp.151-153.

[15] H.H.Clarke, "Definition of physical fitness", Journal of Physical Education and Recreation, 50:8:28, 1979.

[16] D.K. Mathews, "Measurement in Physical Education". (Philadephia: W.B. Saunders Company, 1963), p.5.

[17] H.H. Clarke, "Application of mesuremtn to health and physical education", (Engl and Cliffs: N.J.Prentice Hall, Inc., 1950), p.110.

[18] Singh, "Endurance in atheletics", Athletic Bulletin, 6:2:9, 1962.

[19] LE.Morehouse and A.T. Miller, "Physiology of exercises", (St. Louis: The C.V. Mosby Company, 1976).p.146.

[21] D.K. Mathews, "Measurement in physical education", (London: W.B. Sounders Company, 1973).pp.5-6.

[1] M.P. Vanable, "Transsutaneous stimulation for development of strength and time to peak power." (Appalachian: M.S. In Exercise Science, 1988), p.78.

[2] A.R. Otte, "Effects of isotonic and plyometeric training on upper body power of ninth and tenth grade males", (Southeast Missourstate: M.A. in Secondary Education, 1990), pp.80.

training and calisthenics exercise programmes in developing strength and muscular endurance in united states army recruits", (M.S. In Physical Education, 1984), p.81.

[4] Lee Kang Pyung, "The comparision of the muscular strength and power development through training programs with the external moment force pulley system and the free weight training method using the slow and fast speeds of traiing", (Toled: Ph.D. in Physical Educatin, 1978), p.224.

[5] L.C. Hansen, "The effects of three selected weight training programmes on muscular strength, endurance, girth and cardiovascular endurance", Completed Research, 12:1005, 1970.

[6] E.L. Steenl and walk, "The relative effects of weight training and weight lifting on the development of strength and endurance in university of Washington", Completed Research, 9:134, 1967.

[7] S.Price, "The effects of weight training on strength, endurance, girth and body composition in college women", Completed Research in Health, Physical Education and Recreation, 17:48, 1975.

[8] C.E. Olsen, "The effects of a set circuit weight training programme on strength and muscular endurance of college are men", Completed Research, 23:224, 1981.

[9] R.T. Withers, "The effect of varied weight training loads on the strength of university frshman", Completed Research, 10:125, 1968.

[10] N.G. Prince, "The relationship of college football players strength, speed, agility to the coaches, ranking of ability", Completed Research in Health, Physical Education and Recreation, 10:130 1968.

[11] W.M. Ruth, "A relationship between general motor ability and objective measures Research, in Health, Physical Education and Recreation, 5:102, 1963.

[12] D.L. Jackson, "The relationship of grip strength and lateral wrist strength to skill in golf", Completed Research in Health, Physical Education and Recreation, , 9:43, 1960.

[13] G.E. Greenlee, "The relationship of selected measures of strength perforance:, Completed Research in Health, Phyiscal Education and Recreation, 2:43, 1960.

[14] D.S. Sh and walkell, "The relationship of selected motor performance and anthropometric measurement trial to successful volley ball performance", Dissertation Abstract International, 35:6496-a, 1975.

[15] J.R. Heightan, "Programme weight training", (New York: The Rounold Press Company, 1961).pp, 3-4.

[16] R.U. Hockey, "Physical fitness the pathway of healthful linkign", (St. Louis: The P.V. Mosby Co., 1963), p.93-94.

[17] Thomas Stephan, A comparison of the relationship between speed and agility, 6:30, 1964.

[18] W.J. Chair, Investigation of Tests of Agility Research Quarterelym 2:44, 1960.

[19] J.K. Heighton, "Programme weight training", (New York: The Ronald press Company, 1961),pp.3-4.

[21] M.E. Razzok, "A comparison of the effects of a st and walkard weight training programme and a dynamic weight lifting programme of muscular development of male college students, "Completed Research, 22:86, 1980.

[22] D.E. Genzmer, "The effect of 3 systematic weight training method of jumping ability of high schools basket ball players", Completed Research, 3:86, 1961.

[23] F.G. Arnold, "An experimental investigation of the effects of a weight training programme on underdeveloped junior high school boys", Completed Research, 10:89, 1968.

[24] Bready, C. Frank, Jr., "A study of the effects of heavy resistance up on the battery of uscular development as indicated by strength, endurance and girth of the right elbow flexors:, Completed Research, 4:47, 1962.

[1] G. Kirkley and J. Goodbody, "The manual of weight training", Hutchinson Pupblishing Group, 116, 1978.

[2] H Payne, "Weight training for all sports", (London: Publishing By Pelham Books Litd. 1983: p.39

[3] G. Kirkley and Goodbody, "The manual of weight training", Hutchinson Publishing Group, 87-88, 1978.

[4] H Payne, "Weight training for all sports", (London: Publishing By Pelham Books Litd. 1983: p.44.

5 H.M. Barrow and R.M. Megee, "A practical approach to measurement in physical education", (London : Third Edition, Published By Kenry Kimpton Publishers, 1979,). P.179

[7] H.M. Barrow and R.M. Megee, "A practical approach to measurement in physical education", (London : Third Edition, Published By Henry Kimpton Publishers, 1973,). P.195.

1. AHPER: Weight Training in Sports and Physical Education 1962
2. Armstrong and Tuckler: Injuries in Sports, London Staples Press, 1964
3. Bolan, J.P: Trestment and Prevention of Athletic Inujuries. The Inter-State Printers and Publishers, 1967.
4. Morehouse, L.E. and Rash, P.,J : Sports medicine for Trainers. Philadelphia, B.Saunders Co., 1963
5. Ryans Allan, : Medical Care of the Athlete, McGraw Hill.
6. Pande, P.K. : Know How Sports Medicine, A.p. Publishers, Jallandhar.
7. Morehouse, L.E. : Sports and Medicine for training Philadephia W.B. Saunders Co.
8. Williame, J.G.P. : Sports and Medicines, Arnold Press.

9. Johnson Warren(edited) : Science and Medicine of Exercise and Sports, Harpar and Brothers.
10. Morehouses and Miller : Physiology of Exercise.
11. Falls : Exercise Physiology.
12. Karpovitch : Phusiology of Muscular activity.

13. AHPER: Weight Training in Sports and Physical Education 1962
14. Armstrong and Tuckler: Injuries in Sports, London Staples Press, 1964
15. Bolan, J.P: Trestment and Prevention of Athletic Inujuries. The Inter-State Printers and Publishers, 1967.
16. Morehouse, L.E. and Rash, P.,J : Sports medicine for Trainers. Philadelphia, B.Saunders Co., 1963
17. Ryans Allan, : Medical Care of the Athlete, McGraw Hill.
18. Pande, P.K. : Know How Sports Medicine, A.p. Publishers, Jallandhar.
19. Morehouse, L.E. : Sports and Medicine for training Philadephia W.B. Saunders Co.
20. Williame, J.G.P. : Sports and Medicines, Arnold Press.
21. Johnson Warren(edited) : Science and Medicine of Exercise and Sports, Harpar and Brothers.
22. Morehouses and Miller : Physiology of Exercise.
23. Falls : Exercise Physiology.
24. Karpovitch : Phusiology of Muscular activity.

1. John W. Dunn Scientific principle of Coaching
2. Prentice hall, Englewood clips , N, J And V.N. Rao Kabaddi.

Chapter– II

REVIEW OF RELATED LITERATURE

CHAPTER II

REVIEW OF RELATED LITRATURE

The scholar has gone through available literature to find out the related studies. The relevant studies found in the various sources which the researcher has come across are cited below:

In a study Venable[1] conducted short term weight training (WT) supplemented with electrical muscle stimulation (EMS) increases strength and power more than weight alone, 33 students (ages 18-30 years) were divided into groups EMS and weight (ES) n=13, weight only (WO) n=12, and control © n=8. Weight consisted of lifting free weight 3 days/week for 5 weeks. The ES group was also supplemented with EMS of the quadriceps 3 times/ week. Muscular strength (MS) was assessed using a 1 RM squat. To assess ballistic power (BP) vertical jump scores were converted to power using the Lewis formula and a modified Widget ergo meter test was used to determine peak power (PP) and time to peak power (PP) and time to peak power (TPP). The ES (100.6%) and WO (100.7) groups increases significant. ($P<0.05$) in BP, with WO group having a larger again ($P<0.05$) than the ES group. There were no significant. Changes ($P<0.05$) in PP or TPP for any group. In conclusion short term WT supplemented with EMS does not appear to enhance strength and walk/or power gains over weight alone.

The experiment was conducted by Otto[2] with a purpose to determine if a significant difference in power gains existed between a weight training programme and a weight training progamme combined with upper body ply metrics. The subjects include 21 male 9^{th} and 10^{th} grade students from cape central Hs. The Ss were randomly assigned to a weight training programme or a wt programme combined with upper body ply metric. Subjects were administered the seated medicine ball put to measure body power. Subjects participated in 10 weeks of weight training on Monday, Wednesday and Friday, during weeks 7-10, in addition to the routine workouts, students participated in additional training on Tuesday. The investigator concluded that the experimental. Group showed a significant. Gain in power compared to

the new Madrid country central groups.

This investigation attempts to find the most effective progamme for developing upper body strength and muscular endurance by comparing the effectiveness of the current army physical training, progamme used in Initial entry training with 4 other supplemental progammes. The students for this investigation were 214 male army recruits under going initial entry training at fort Knox key the training period was 7 weeks were divided into 5 groups the current army training divided program group an alternate day calisthenics group, a daily calisthenics group, an alternate day weight training group, and a daily weight group. The soldiers in all 5 groups were tested 3 times on the pushup test, the 1 repetition maximum bench press test. Results showed that there was no significance diffuse between the groups on the pushup test at the end of the 7 weeks training period. There was significance different between both weight training groups and the alternate day calisthenics group on the bench press tests. There was no significance different on any of the 3 tests between the daily weight training or alternate day weight groups or between the daily calisthenics or alternate day calisthenics groups at the end of the 7 weeks training period.[3]

In a study[4] 25 Shivaji High School boys and 7 girls were randomly assigned to 4 groups receiving 3 training sessions per week over a 7 weeks period. Each subject was tested for strength and power before and after the training programme ANCOVA indicated that fast rate of training produced greater improvement in knee extension strength ($P<0.05$) and the external movement force pulley system with a fast rate of training produced the best gain in vertical improvement in knee extension strength ($P<0.05$). All training programme improved muscular strength and produced mixed results with motor ability measures. Improvement was especially noticeable with 8 Ibo on the limb. The vertical jump performance in activities requiring the use of those muscle groups. If the activity requires fast movement, that training must be performed at fast rate.

Honsen[5] has conducted his experiment on 30 freshman and varsity foot ball players from the 1968 South Deco State University football teams, were randomly divided into 3 groups. One group used a modification of the Delormewatkins method of training; the second group followed the traditional strength training method, while the third followed a circuit training programme. Training covered a period of 7 weeks, 3 times a week. Test for muscular strength, endurance and girths were administered before the programme began, at the end of 3 weeks of training and at the conclusion of the training programme. All groups significantly improved on all the parameters and there was no significant difference between the groups.

Steensland[6] walk studied the relative effects of weight training and weight lifting on the development of strength and endurance in University of Washington males. The weight training programme consisted of 10 barbells. 5 dumb bells and two special exercises performed with 8-10 R.M The weight lifting programme consisted of 7 barbell exercises including 3 Olympic lifts performed with 3-5 R.M Both groups were tested before and after 10 weeks of training with the University of Washington weight training test with 7 exercises performed for R.M. (endurance) and three exercises performed for maximum lift (strength) both group gained significantly in strength and endurance at the 0.1 level. The weight-training group showed slightly greater gain in strength and endurance but the difference was not significant at the 0.05 level.

Price[7]has selected subjects (n=76) at randomly were divided into two experimental groups and one control group. The control group did not engage in physical training during the 10-week period between pre and post test. The weight lifting design was three fled. 1 Set of 25 reps. 3 sets of 8 reps and 4 sets of 2 reps for group A, B and C respectively. Training was accomplished twice weekly. An ANOVA was run to determine significance of change and 't' was used to determine if a relationship existed between increases in strength and endurance, and decreases in skin fold measurements. The post test data revealed significant increases in strength and muscle endurance,

decreases in all skin fold measurements, girth measurements and present body fat.

Olsen[8] enrolled 42 college males in weight training classes per and post tests for 1 RM strength absolute muscular endurance and relative muscular endurance were given for the bench press and leg press. Treatment consisted of 2 works out session. Subjects were required to complete 2 sets of 10 exercises. Both sets of an exercise were completed before and moved to the next. A work rest ratio was 100 sec/10 sec was used. Pre and post test mean changes were analyzed using 't' test and dependent's' analyses. Mean changes between pre and post tests for 1 RM strength in the bench press and leg press, a absolute and relative muscular endurance in the bench press were statistically significant ($P<0.05$). Non significant change were found for the test of relative muscular endurance in the leg press ($P>0.05$).

The purpose of the study of Withers[9] was to investigate the effect of the following combination of sets and repetitions in a weight training programme on the acquisition of strength: 3 groups of 7 maximum reps (3 x 3 MR); 4 maximum reps (4 x 5 M); and groups of 3 maximum reps (5x3 MR). The test groups trained solely on the curl bench press, and squat. With in groups' ratio indicated that all groups registered strength gains that were highly significant. Garrett's analysis of covariance showed that no group and T=1.5 years respectively. The mature experimental (ME) and young experimental (YE) groups showed. Significant ($P<0.01$) increase in strength on bench press, pull down and leg press as compared to the nature control (MC) and young control (YC) groups.

Gains for the experimental groups ranged from 13 to 31 % compared to gains of the 0 to 80% for the control groups. Strength gains were similar across age group except that the ME group gained more leg strength than the YE group. The experimental group showed significant ($P<0.01$) improvement on physical self, self concept changes was the same for the ME and YE groups indicating that this strength programme has similar effect and

self-esteem regardless of age. The results of this study agree with the literature indicating that strength training in fitness programmers for healthy mature Men can result an increased levels of strength and can positively affect self concept.

Prince[10] conducted a study on the relationship of college football player's strength, speed and agility to the coaches, marking of ability playing position were combined in to offensive backs, defensive back, offensive lineman, defensive lineman and in to whole group units. It was concluded that arm strength and total 'T' score were significant predictors of footballer's ability leg strength and speed were significant predictors of football ability.

The Seatt[11] general motor ability was administered by Ruth to college Men who also took a 6 item objective test and were rated subjectively on mine intermediate swimming skills at the beginning and of the semester. The subjective rating was used as the criterion for the objective test items. The objective test had acceptable reliability and validity for use at the intermediate level but general motor ability as measured showed on relationship to achievement in intermediate swimming.

Jackson[12] studied the relationship of grip strength and lateral wrist strength to skill in golf, for this grip strength and wrist strength were measured on thirty male students in required physical education golf classes for 2 weeks, for one hour twice a week. The right and left grip strength in crossed significantly. The correlation between in initial or final grip strength and skill were most significant. Bilateral differences in grip and wrist strength did not correlate significantly with the skills.

Greenlee[13] administered tests of grip strength leg strength and shoulder girdle, static and dynamic balance and various measures of kinesthesia including wrist extension, rotation position of forearm and for work weight shift, to 122 beginning bowling course. The results of these tests were

correlated with an average of the last six game bowled. Significant positive relationship was evident between bowling performance and strength.

Sand walk ell established the relationship of selected motor performance and anthropometric to successful volley ball players. He used a six item battery for this purpose. He found out that power appeared to be most significant factor in successful volley ball performance.

Jack[15] is of the opinion that if speed is to be developed strength development is a must once strength is developed. Other components of physical fitness will be automatically developed up to some extent as strength is must to perform any types of activity. He suggests weight training as better method for development of speed, agility and endurance.

Hockey[16] states that agility of the body is the ability to change direction quickly and to control body movement skill requiring rapid movement of the entire body in different direction and response to unexpected circumstances. In simple words we can say that it is the ability to change direction accurately and ability to stop and start and to change direction quickly in much more important than in others. In sports such as basketball, badminton and tennis agility is the most important factor. This may be measured by such task as the shuttle run and activities which require a quick change of direction.

Subjects were measured for the last 40 yards of the 100 yard dash, and agility was assessed with Malloy's zing-sig rung. Twenty subjects from the freshman base ball team were selected for testing A.P. Pelican automatic performance analyzer was used to time all tests to 1/100 of second. Running speed and agility were found to correlate as observed by Stephan. [17]

Jennet[18] found that performance on agility test was accounted for in part by reaction time, speed or movement, strength, balance, change of direction and body size and form. A significant difference was found between several mean factor score for the various groups of the athletes.

Heighten[19] is of the opinion that if speed is too developed strength development is a must because once strength is developed; other components of physical fitness will be automatically developed up to some extent as strength is must to perform any type of activity. He suggests weight training as better method for development of speed agility and endurance.

Dorothy and Haverstock[20] have conducted a study on the hundred and two Men volley ball players of the University of Meryl and walk. The subjects were given eight weeks volleyball course and volleyball tests were repeated at 3 ft and 7 ft refraining lines. The subject's heights were measured and they were given tests of agility and jumping ability. These factors were measured by means of the Scoff Obstacle Race Test and Vertical Jumping Test respectively.

Razzok[21] has selected 44 subjects for experiment. They were divided 2 groups who were given training 3 day/ week for 9 weeks. Each training programme was divided into 3 training cycles. Subjects were tested in muscular strength, muscular power and muscular endurance and measured for body weight and selected girth measurements of left and right biceps, flexed chest exp and walked and left and right thigh biceps, flexed chest exp and walked and left and right thigh contracted after 3,6 and 9 weeks of training. The data were described graphically and analyzed statistically. Inter co- relations among the variables for both groups were computed treatment included the paired test I way ANCOVA. The results indicated the both groups had significantly increased ($P<0.001$) in muscular strength, power, endurance and muscle girths. A highly significant difference was founded in muscular strength favoring the dynamic weight lifting group.

Later on, Genzmer[22] studied the effect of 3 systematic weight-training methods in jumping ability of high school basketball players. He divided 24 junior varsity and freshmen a ball team into 4 groups using the McCoy's a knee bend group, board rhythm group and control group.

A modified version of the Sergeant jump was used in recording the subjects jumping ability. The results showed no significant difference at the 5% level of confidence between the methods used.

Arnold[23] studies in the context of the effects of a weight training programme on under-developed junior high school boys. He selected eighty four high school boys were selected by their stand walking in the class as measured by the California Physical Performance Test; they were paired by initial test score and assigned at randomly to either the weight training or the exercise group. They restated at the conclusion at the week experimental period. The weight training programme was more effective in developing physical performance in the activities requiring large muscle strength such as soft ball throw for distance, pull ups and stand walking broad jump. It was less effective in developing performance in those activities requiring circular respiratory endurance and speed. Although a greater total increment occurred in the physical performance of the experimental group, the weight training programme was not significantly better than the exercise programme in developing total physical fitness.

Kadu[1] conducted a study, with the purpose to determine the effect of selected exercises on the agility performance of kho-kho players Total 40 male district kho-kho players (age ranged from 13 to 15 years) were selected randomly from Shri. Shivaji main branch high school, Amravati and divided into two homogeneous groups Experimental group was served 6 weeks training programme and their agility performance was measured by burpee and shuttle run test. It was concluded that training Programme had the significance improvement in the agility performance of kho-kho players.

Gulalkari[2] had undertaken a study with a view to finding out the effect of some selected exercises on the agility performance of kho-kho players. Thirty inter collegiate male kho-kho players (age ranged from 18 to 24 years) were selected randomly from the degree college of physical education, Amravati and divided randomly by equating their performance in two experimental and control groups having fifteen students in each group. The experimental group

was served 6 weeks training programme with two sets of exercises. The training was given 14 minutes, each day for 6 days in a week after the warming up exercises. The data were collected by the administration of Illinois agility-run, shuttle run test and reaction response test and significant differences between the mean of initial and final test were computed by‘t’ test. The study concluded that both sets of exercises given in the study might improve the agility significantly.

In a study Gupta[3] compared and generalized the physical fitness of women sprinters and kho-kho players. Total 50 girls inter collegiate sprinters and kho-kho players, ages ranged from 17 to 25 were selected form the Amravati University and their physical fitness was measured by the administration of DGWS test. Significance difference between the mean were competed by‘t’ test and tested at 0.05 level of confidence. The study concludes that women sprinters were significantly superior in physical fitness in comparison to kho-kho players.

The purpose of Kemble’s[5] study was to examine to effect of interval training on the physical fitness of the kho-kho players. Thirty kho-kho players between the age group of 14 to 16 were selected and divided in a control and an experiment group. The experimental programme for 6 weeks and the final data was collected by the administration of JR test after the six weeks training schedule. It was concluded that the experimental group improved physical fitness significantly in comparison to control group. It was observed that the control group also improved the physical fitness because of their regular practice schedule.

While referring the research journals it can be seen that various training programmes for improving physical fitness utility of various activity such as Games, Gymnastics, Athletics, Rhythmic exercises, Yoga, Mallakhamb for improvement of physical fitness has been proved so far. Efforts have been made to locate literature related to this study mentioned as below.

Chavan[7] under took a study to find out significant differences in speed of movement, agility, reaction time and leg strength of kho-kho and Kabaddi players. The data were collected from the 40 intercollegiate 20 from each game kho-kho and Kabaddi players. The subjects were tested on speed, agility, reaction time and leg strength. On the basis of data analysis it was observed that kho-kho players were significantly Superior in leg strength and agility, whereas Kabaddi players were significantly fasters in spleen and reaction time test from their counter parts.

Maroc[8] has studied the effect of two Programmes of circuit training on the physical fitness of college women. The subjects selected for the study were 62 undergraduate women. The subjects were tested in agility, lower back. And hip flexibility, arm and shoulder girdle strength, and abdominal strength. Pre and post tests were conducted. All the subjects were imported training for 6 weeks. After post test all the stated measures were found statistically significant.

Rakesh Malik and Neeru Malik[9] started in their study motor fitness variables as predicts in male Basketball playing Ability. Motor fitness variables including speed, coordinative abilities, agility, explosive leg power, shoulder strength, endurance, abdominal muscle strength endurance, spine flexibility have been studied on 66 male basketball players. Playing ability was evaluated through subjective method during the competition on a five point scale by a panel of 3 experts significantly correlated to all the motor fitness variable studied. 50-yard dash came out as the most important factor in playing basketball. Regression equation for playing ability with some motor fitness variables have been worked out.

Miller[10] has suggested circuit training and weight training Programme for 9^{th} grade boys (N=50) for the development of upper body strength. Students were administered the Oregon simplification of Roger's physical fitness index to assess the development of upper body strength. Both weight training and

circuit training Programme produced significant gain in upper body strength with the circuit training gains being greater.

Bagh[11] conducted a study of effect of circuit training for promotion of skill development of female basketball players between the age group of 12 to 14 years. The circuit training taught the experimental subject were rope jumping medicine ball toss, sit down push ups, bent knee sit up – Jump squats, medicine ball for toss, bench press tapping, and push ups. The subjects (N=60) were randomly divided into 2 group and circuit training exercise Programme was imported only to the experimental group (N=30).

The experiment of Kapila[19] had the purpose to study the effect of resistance running on speed, leg strength, Muscular, Endurance, Ankle Flexibility and Agility. The subjects were 30 men College Students. The data was collected within a period of six weeks. Initial tests of speed, Leg Strength, Muscular, Endurance, and Ankle Flexibility were administered. On that basis the subjects were randomly assigned into two groups, via group – A and, Group-B. The Group – A was under resistance running and the Group B was under sprint running and then post-Test was administered. Statistically significant with‘t’ ratio.

Deshmukh[21] conducted the study with a purpose to compare the physical fitness of women Kho-Kho and basketball players. Eight players each of kho-kho and basketball were randomly selected from five physical fitness of women Kho-Kho and basketball players. Eight players each of kho-kho and basketball were randomly selected from five selective affiliated colleges of Amravati University. These female subjects were in the age group of 18 to 20 years. Thus 40 subjects each of Kho-Kho and Basketball, were tested by administrating the AAHPER youth physical fitness Test. It was concluded that the physical fitness of the female of the female Kho-Kho players was found significantly superior to that of the Basketball players at inter collegiate level.

Pawar organized a study, the purpose of which was to find out the effect of kho-kho practicing on the physical fitness of the girl players of player’s

participation. Duration of play and values were positively accepted and needed changes.

According to Kamble's[5] study

It was concluded that the experimental group improved physical fitness significantly in comparison to control group it was observed that the control also improved the physical fitness because of their regular practice schedule.

Therefore the present study seems to be justified.

Charles Frank studied an effect of heavy resistance weight training of the pattern of muscular development, as indicated by strength, girth and endurance measures of the right elbow flexors were studied using as subjects 34 grade 7 students. It was found that heavy resistance exercises did produce significant increases in size, strength and endurance of right elbow flexors.

The review of literature presented above revealed that in some experiments on weight training could show significant improvement in the factors of physical fitness and some other did not agree with the results. Such multiplicity in opinion was the source of inspiration for the justification of undertaking the present study.

CHAPTER – III

METHODOLOGY

METHODS AND MATERIALS

This study aims to evaluate a **"EFFECTS OF WEIGHT TRAINING PROGRAMME ON SELECTED PHYSICAL FITNESS, VARIABLES OF RAIDING AND BLOCKING SKILLS OF MALE KABADDI PLAYERS OF SWAMI RAMANAND TEERTH MARATHAWADA UNIVARSITY NANDED"**

3.1 Sample:

The subjects for this study were randomly selected from S.R.T.M.U. Nanded. 200 subjects of the age between 18 to 23 years were randomly selected. Total 200 subjects participated in the study. All the subjects were non sportsperson learning in different college but registered to either of the training centers, staying at college hostels or at home to ensure the untrained development in Kabaddi skills training. Further these 100 subjects on both the University were classified in two group's i.e. experimental group with 100 subjects and control group with 100 subjects.

3.2 Design of the Study (Experimental Design)

The investigator conducted experiment on two parallel groups for his research work. One group received a pre-determined weight training programme whereas the other group did not receive the said stimulus. Thus, parallel group design was considered for this experiment.

3.3 Research Design:

Table 3.1 showing the distribution of samples in Experimental and Control group at **SWAMI RAMANAND TEERTH MARATHAWADA UNIVARSITY NANDED"**

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Group	Number of subjects	Total
	Boys	
Experimental Group	100	100
Control Group	100	100

Table 3.2 showing the age distribution of the subjects at **SWAMI RAMANAND TEERTH MARATHAWADA UNIVARSITY NANDED"**

3 .

Group	S.R.T.M.U.Nanded.
Age Group	18-23yrs

A sample of 200 male Kabaddi players was randomly selected from **SWAMI RAMANAND TEERTH MARATHAWADA UNIVARSITY NANDED"**

3.4 Tools and Means of collecting data:

Personal Data Bank:

It is used to collect the information of an individual. Personal data bank consists of the following aspects.

- Full Name
- Name of college
- Date of Birth
- Gender

3.5 Experimental Design of the Research:

This is an experimental research. For the present study informal experimental design is considered.

Experimental Design: Post test only random group design.

1. For the research study two groups were formed namely experimental group and control group. The dependent variable is measured in both the groups for an identical time period at post test only.
2. The weight training was then introduced to Experimental group with regular physical training where as control group was given only physical training for identical time period. Dependent variable is measured in experimental the groups after regular Training for one year.
3. The effect of weight training will be determined by evaluating the changes in the performance in E.G. the groups at post test. This can be exhibited in the following form.

Sr.No.	Groups	Type of the training introduced	Results
1	Experimental group	Weight training with physical practice	Level of Performance of Experimental group (Y)
2	Control Group	Physical practice only	Level of performance of Control group. (Z)

3.6 Procedure: (Conduct of the Test)

1. Researcher have selected S.R.T.M.U.Nanded for the selecting the samples for the study.
2. 200 subjects were randomly selected from S.R.T.M.U. Nanded total 200 subjects participated in present study.
3. Further these subjects were classified in two groups. i.e. Experimental groups 100 and Control group 100 subject in each.
4. The subjects of the Experimental group and Control Group were given basic and allied weight training and raiding and blocking skill.

3.7 Procedure of Implementing weight Training Programme:

There is no certain way to practice skills. It is all left to the individual preference and the present circumstances. For the present study

researcher have given physical fitness before and during the practice time.

3.8 Collection of the Data:

1. Nine skill tests were conducted at regular Training to evaluate the performance of the novice Kabaddi of experimental group and control group. All the tests were conducted as per the schedule furnished in appendix IV.
2. To judge the performance given by the novice Kabaddi of both the groups, 3 qualified experts of Kabaddi judges namely Prof. M.S.Rathod, Shri P.K.Hargavkar, Shri Prof. Uttam Devkate were appointed. All the 3 judges have passed the judging exam conducted. Either by Amateur Kabaddi Federation of India.
3. During the skill test of Kabaddi of both the group's i.e. Experimental group and control group were directed to perform the learnt skill properly.
4. Raiding and blocking skill was given maximum 10 points and for every performance of the skill deductions were given by the 3 judges which were subtracted from the maximum 10 points to get the final score for the executed skill. Higher and lowest scores were ignored and middle score was considered as the final score. Deduction for the executed skills were made as per the rules and the regulations enlisted in appendix V and VI.
5. The said judging pattern was adopted for every skill test and for final skill test.
6. The collected data of every test was tabulated for further statistical analysis.

50 Meter Run Sprint

12 Min Run and Walk

Shuttle run

Raiding Skill

Blocking Skill

Standing Broad Jump

Medicine Ball

Sit Ups

Chin Ups

Bench Press

Shoulder Press

Full Squat

Half Squat

Used for Dependent Variables

3.8.1 50 Meter Run Sprint

Stopwatch, 50 Meter long ground, clapper.

3.8.2. 12 Minute Run and Walk

Stop watch, Clapper, 400 meter track.

3.8.3. Shuttle Run

Stop watch, clapper, Lane –10 x 6 meters average.

3.8.4 Raiding

Stop Watch Chalk powder, Rope 10 /13 Kabaddi ground

3.8.5 Blocking

Stop Watch Chalk powder Rope 10/13 Kabaddi ground.

Procedure of Organizing Independent Variables

3.8.6 Standing Broad Jump

Jumping Pit tape, chalk powder.

3.8.7 Medicine Ball

Medicine Ball, Tape, Line Marking, chalk powder, Cement Playground

3.8.8 Sit-ups

Mat and Stop Watch

3.8.9 Chin-ups

Horizontal Bar, Stop Watch.

Procedure of Organizing Independent Variables

3.8.10 Bench Press

Objective

To develop the particulars on the upper chest, brachia anterior and deltoid.

Procedure

The lifter shall lie supine on a horizontal with both feet in contact with the floor. The bar-bell shall be placed into the lifter's hand at arm length above the chest. The width of the grip taken is limited by the requirement that the forearms shall be vertical at the start of the press from the chest. From the arms length position the lifter shall lower the barbell until it touches the chest,

where it shall be held until the referee signals for the state of the press. This he will do as soon as the observe that the lifter is in the correct position for pressing.

The pressing movement shall be continued with an even extension of the arms and the head, shoulders and buttocks shall remain in contact with the bench throughout the lift. At no time during the lift shall the lifter's upper arms come into contact with the bench.

When the Referee observes the lifter in the correct finishing position, he will give the signal for the completion of the lift.

3.8.11 Shoulder Press

Objective

Improve the strength of shoulder, arms and back.

Procedure

The press behind the neck starts the bar resting across your shoulder and the top of your back and requires a slightly different balance with your head forward. So that the bar doesn't strike the back of you're head on the way up or down. Less weight on the bar is possible but this exercise is good for shoulder back and arms strength.

3.8.12 Full Squat

Procedure

Clean the bar-bell to the shoulders, then immediately lift over the head to rest on the back of the shoulders. Alternatively (and essentially when heavier weight are hand walked) the bar bell can be taker from squat stand walks or hand walked up to behind the shoulder by assistants stand with the feet apart about 18 inches or so keeping back flat, bend the knees and sink down until the tops of the things are parallel with the floor, keeping the heels flat on the floor, some trainees will find it difficult to keep the heels down on

the floor. If so, then the heels can be rested on a block of wood about 1 or 2 inches thick, but it is better to dispense with this aid as soon as possible, as one gets more supple and used to the movement. Perseverance and practice will eventually overcome this conditions which is caused by right hamstrings and / or tightness in the ankle joints. Immediately the lowest point is reached, as described above, return to the upright position. The movement is made easier if one leans forward slightly, but be sure to maintain a straight (not vertical) back throughout. The full movement to the maximum low position can be practiced, but it is advisable not to use heavy weights in this low position. Practice it with light to moderate weights or with lightweights for warming up purpose. The squat can also be performed by sitting down on to a bench or from sufficient height so that when the bottom touches it, the tops of the thighs are parallel wit the floor. This is a safeguard against going into low positions. Inhale as deeply as possible while lowering the body, exhale as the upright position regained.

3.8.13 Half Squat.

The half squat has a lowest position when the thighs are at about 45^0, so even heavier weights may be used. However, the heavier weights make it imperative that safety rack is used or that catchers are at h and walk. The quarter squat is more restrictive still and should only used in highly specialized schedule.

3.9 Procedure of the Administration

3.9.1 50 Meter Run Sprint

Purpose

To measure speed

Procedures

After a sort warm up period the student takes a position behind the starting line. Best results are obtained when 2 students run at the same time for competition. The starter uses the comm. and walk, “Are you ready?” And “Go”!. The latter is accompanied by a downward sweep of the arm as a signal to the timer. The students run across the finish line. One trial is permitted.

Instructions

You may take any position behind the starting line you wish. On the comm. and 'Go'! You have to run as fast as you can across the finish line. Do not slow up until you are across the finish line. Then you may slow down 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.

3.9.2 12 Minute Run and Walk (Fig.3.6.3)

Purpose: To measure Endurance.

Facilities / Equipments: Stop watch, track, marking powder, the subject should wear spikes or run bare foot.

Procedure:

All the signal ready? Go, the subject covers as much distance as possible in 12 minutes the track and running area is marked of every 100 Yards, the tester can count the number of laps completed and additional incomplete lap distance covered in 12 minutes respectively. Although the tester has to encourage, all the subjects to run the entire period of 12 minutes but interspersed walking is allowed and total distance covered exactly in 12 minutes is recorded correct up to one yard.

3.9.3 Shuttle Run

Purpose

To measure agility

Procedure

The student stand walks at one of the line with the two blocks at the other line. On the signal the student run to the blocks, takes one and returns to the starting line and places the blocks behind that line. He then returns to the

second block which he carried to the starting line on his way back. Two students could run at the same time if two timers are available.

Instructions

On the signal 'Go' you must run as fast as you can to the net line pickup a block. You should return the block over the second line where you place it on the floor. Do not throw it you return for the second block and this time, you may run across the starting line as fast as you can without placing the block on the floor.

Scoring

The score is the elapsed time recorded in seconds and tenth of a second for the best of two trials.

3.9.4 Standing Broad Jump

All Subjects are informed first that they should stand in a queue form start line of jumping pith, keep both legs parallel stance, In standing broad jump all subject has to jump as long distance as they possible exactly, In three attempt the long distance covered by the subject was recorded.

3.9.5 Sit-ups

All subject here informed that they should lie down on mat back side his neck, and with straight legs, each subject has to make more sit ups as they can in one stroke sit ups make by each subject was recorded.

3.9.6 Raiding

On Kabaddi ground (10x13) Two teams each including 7 subject. In Kabaddi game each subject has given 10 times Raiding. In Ten times Raiding he should score more point as possible he can each subject score point was recorded.

3.9.7 Blocking

On Kabaddi ground (10x13) two teams each including 7 subject. In Kabaddi game each opposite subject has to given 10 times Raiding and

as he tries to make more score at that time subjects tries to block Raider and his blocking score was recorded.

3.9.8 Medicine Ball

On hard court, all subjects should sit with spread legs and with folded hands having medicine ball. In their hands should be in front of their chest hold in ball. All subjects have to throw medicine ball with great force. As the ball fell down, that distance covered by the subject was recorded.

3.9.9 Chin-ups

All Subjects informed to stand near horizontal bar. Then take the bar and raise hands straight their legs should also straight. As soon as he ordered to make Chin ups each subjects has to make more chin ups as possible as he can. Chin ups made by each subject was recorded.

3.10 Instruments Used for Independent Variables

3.10.1 Bench Press

One set of bench, barbell and weight plates according to weight training programme schedule weight in Kg.

3.10.2 Shoulder Press

One barbell set, weight plates according to weight training programme schedule weight in kg.

3.10.3 Half Squat

One baseball set mirror, and weight plates according to weight training programme schedule, weight in kg.

3.10.4 Full Squat

One barbell set, mirror and weight plates according to weight training programme schedule weight in kg.

3.11 Controlling Extraneous

The extraneous variables like age, sex, foot exercise and environment conditions, apparatus were controlled by resorting to the techniques of elimination. Constancy of condition was kept in order by using a separate control group. Like experimental group, the control group was also tested. Both the groups were treated in the same way with respect to the independent variables.

3.12 Procedure of the Study

All the subjects (N=200) representing the sample was tested as follows:

3.12.1 Pre-test

All the subjects participated in the pre-test which consists of the following events.

- 50 Meter run;
- 12 Minute Run and walk
- Shuttle Run.
- Standing Broad Jump
- Sit-ups
- Raiding
- Blocking
- Medicine Ball
- Chin-ups

Before participation, all were given proper instruction as to how to participate in each event. The individual scores of each event were recorded and preserved carefully.

3.13 Training Programme

The subjects of the experimental group were exposed to exercises of weight training programme. The training programme started immediately after the pre testing. The training was administrated to the experimental group on outdoor ground for a period of one year, from Monday, Wednesday, Friday

and Saturday in afternoon.

The daily distribution of time for all training programme were as follows.

1. Warm up	15 Minutes
2. Weight training	25 Minutes
3. Relaxation	05 Minutes

3.13.1 Training Programme Schedule

The investigator selected 100 male subjects of Swami Ramananad Thirth Marathwada University Nanded for experiment. Another 100 male subjects was kept under control group. Training programme was imparted to the subjects of the experimental group for a period of One year as follows:

1. Weight training is one of the methods for improving sports performance. This method was used in this experiment to see if it plays a role in improving physical performance of Men Kabaddi players having age group of 18 to 23 years.

2. Above mentioned weight training exercises were imparted from1st November 2009 to 30th October 2010 from onwards. Weight training exercises were programmed from Monday to Saturday. Sunday was treated as holiday. Monday, Wednesday and Friday were the training days for leg exercises i.e., full squat and half squat. While hand exercise like bench press and shoulder press were given on Tuesday, Thursday and Saturday.

The subjects of the control group did not participate in the above training schedule; however, they were engaged with the some recreational activities during the experimental period.

3.13.2 Training Programme

The subjects of the experimental group were exposed to exercises of weight training programme. The training programme started immediately after the pre testing. The training was administrated to the experimental group on outdoor ground for a period of one year, from Monday, Wednesday, Friday and Saturday in afternoon.

The daily distribution of time for all training programme were as follows.

1. Warm up	15 Minutes
2. Weight training	25 Minutes
3. Relaxation	05 Minutes

Table 1

Blue Print of Subject's Distribution

Group	No. of Subjects
Control Group	100
Experimental Group	100
TOTAL =	200

Table 2

Schedule of Weight Training Programme

Days			I	II	III	IV	V	VI
Monday	Full Squat	Wei	5	5	10	10	15	5
		Rep	10	10	10	10	10	10
Wednesday		Set	3	3	3	3	3	3
Friday		Wei	10	10	10	10	10	10
	Half Squat	Rip	10	10	10	10	10	10
		Set	3	3	3	3	3	3
Tuesday	Bench Press	Wei	3	3	4	4	5	3
		Rip	10	10	10	10	10	10
Thursday		Set	3	3	3	3	3	3
Saturday	Shoulder	Wei	3	3	4	4	5	3
	Press	Rip	10	10	10	10	10	10
		Set	3	3	3	3	3	3

Note: Wei = weight in kegs, Rep = Repetition

3.13.3 Post Test

After completion of one year training period with weight training exercises, all the subjects participated in the post-testing programme which was conducted like pre-test. The post-test were also recorded and preserved carefully for statistical analysis.

3.13.4 Statistical Design

The data were analyzed by using the mean, S.D. and‘t’ test as suggested by McGeehan for significance of difference.

3.13.5 Statistical Methods:

To analyze the collected data, the scores are arranged according to the comparison and in sequential order so as to find out the statistical values. The following statistical variables are selected for comparing, analyzing and interpretation of numerical values and basing on which the findings are discussed.

Mean is computed by adding all the scores and then dividing by the number of scores involved. The mean is used in the study to measure the average in growth and development.

Standard Deviation is computed in the study for the measures of variability. Standard deviation reflected the magnitude of the deviations of the scores from their mean.

For testing the null hypothesis for the difference between various sample means the t-Test is used at significance of 0.05 levels.

The obtained values of the mean, standard deviation, t-Test, are given in the tables followed by the graphical representation.

The analysis was done by SPSS (For Social Science Statistical Package).

CHAPTER – IV

RESULTS AND DISCUSSIONS

After completion of one year training period with weight training programme and physical exercise all the subjects participated in the post testing programme which was conducted like pre test. The post test data was also recorded and preserved carefully for statistical analysis by using''t' test.

In this analysis of data Table 3 shows mean score and standard deviation of pre and post of the selected variable of the controlled and experimental group.

Table 4 shows paired samples correlations of per and post test of the selected variables in case of controlled and experimental group.

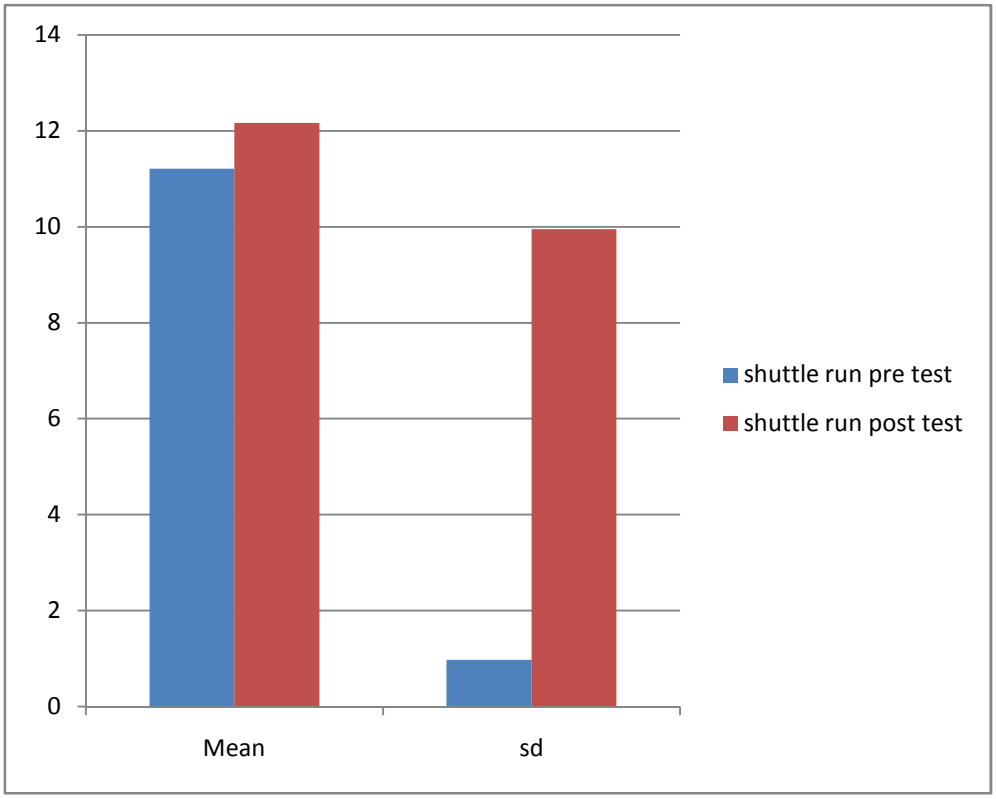
The comparison of mean gain had not't' value of pre and post test of the controlled and experimental group have been presented in Table 5.

Table 6 is a group statistics in which mean gain and standard deviation of the controlled and experimental group have been presented. Comparison of mean gain between the controlled and experimental group by using Independent Sample Test have been presented in Table 3.

T.3 Sr. No.	Independent Variable/Dependant		Pretest Mean	Posttest Mean	S.D. Pre	Post	Co relation	T Value	Difference
1	Weight training E.G.	50 Mt.R.Sprint	8.3581	8.0083	.42213	.44010	0.894	17.568	
2	Weight trainingE . G.	Standing B.Jump	5.9582	6.5432	.78516	.88875	.807	-11.044	99
3	Weight training E.G.	Shuttle Run Mean gain	15.4681	14.6811	.98144	1.1751	.809	11.374	99
4	Weight training E.G.	Sit Ups Mean Gain	19.50	24.60	5.711	6.781	.948	-22.404	99
5	Weight training E.G.	Raiding Mean Gain	4.90	5.30	1.307	1.106	.923	-7.805	99
6	Weight training E.G.	Blocking Mean Gain	4.80	5.00	1.172	1.421	.970	-4.975	99
7	Weight training E.G.	12 Min Run and Walk	1835.25	1992.27	202.195	273.467	.888	-11.818	99
8	Weight training E.G.	Medicine pre test	3.1694	3.4006	.47624	.55225	.948	-12.692	99
9	Weight training E.G.	Chin ups	6.57	8.67	1.519	1.787	9.22	-29.850	99

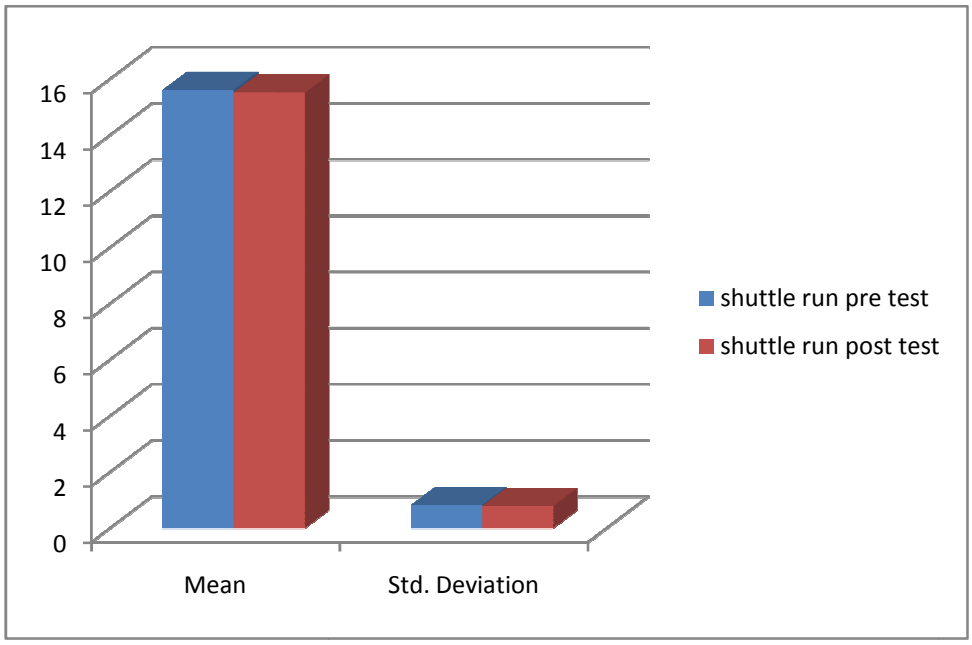
T.4 Sr.no.	IndependentVariable/Dependant		Pretest Mean	Posttest Mean	S.D. Pre	Post	Correlation	T Value	Difference
1	Weight Training C .G	50 Mt.R.Sprint	8.1424	8.1405	.55306	.55225	.999	.9943	99
2	Weight Training C .G	Standing B.Jump	5.4135	5.3737	.64956	.082951	.882	1.000	99
3	Weight Training C .G	Shuttle Run Mean gain	15.6134	15.5196	.82713	.79573	.954	3.794	99
4	Weight Training C .G	Sit-ups Mean Gain	17.68	18.22	4.722	5.144	.987	-6.051	99
5	Weight Training C .G	Raiding Mean Gain	5.20	4.70	1.172	1.193	.809	6.834	99
6	Weight Training C .G	Blocking Mean Gain	5.10	5.00	1.307	1.421	.974	3.000	99
7	Weight Training C .G	12 Min Run and Walk	1933.9800	1937.9800	334.47242	339.06175	.999	-2.553	99
8	Weight Training C .G	Medicine pre test	2.8201	2.8506	.56864	.58286	.995	-5.369	99
9	Weight Training C .G	Chin-ups Pre test.	6.46	6.51	1.396	1.432	.988	-2.283	99

T 5 Sr.No.	Independent Variable	Dependant Variable	Group Compared	N	Mean Gain	S .D.	T Value	Difference
1	Weight Training e.g. &c.g.	50 M.R.Sprint	E.G.	100	.3578	.18705	18.876	198
			C.G.	100	.0029	.1898		
2	Weight Training	Standing B.Jump	E.G.	100	.6079	.79405	7.656	198
			C.G.	100	.0000	.0000	00	
3	Weight Training	Shuttle Run Mean gain	E.G.	100	.8218	.58593	11.374	198
			C.G.	100	.0829	.22666	3.794	
4	Weight Training	Sit Ups Mean Gain	E.G.	100	5.11	2.274	18.710	198
			C.G.	100	.54	.892		
5	Weight Training	Raiding Mean Gain	E.G.	100	.40	.512	10.075	198
			C.G.	100	-.50	.732		
6	Weight Training	Blocking Mean Gain	E.G.	100	.20	.402	5.745	198
			C.G.	100	-.10	.333		
7	Weight Training	12 Min Run and Walk	E.G.	100	167.1212	95.22554	16.901	198
			C.G.	100	4.0000	15.6666		
8	Weight Training	Medicine pre test	E.G.	100	.2313	.18154	10.556	198
			C.G.	100	.0305	.o5681		
9	Weight Training	Chin Ups Pre test.	E.G.	100	2.35	2.679	8.555	198
			C.G.	100	.05	.219		



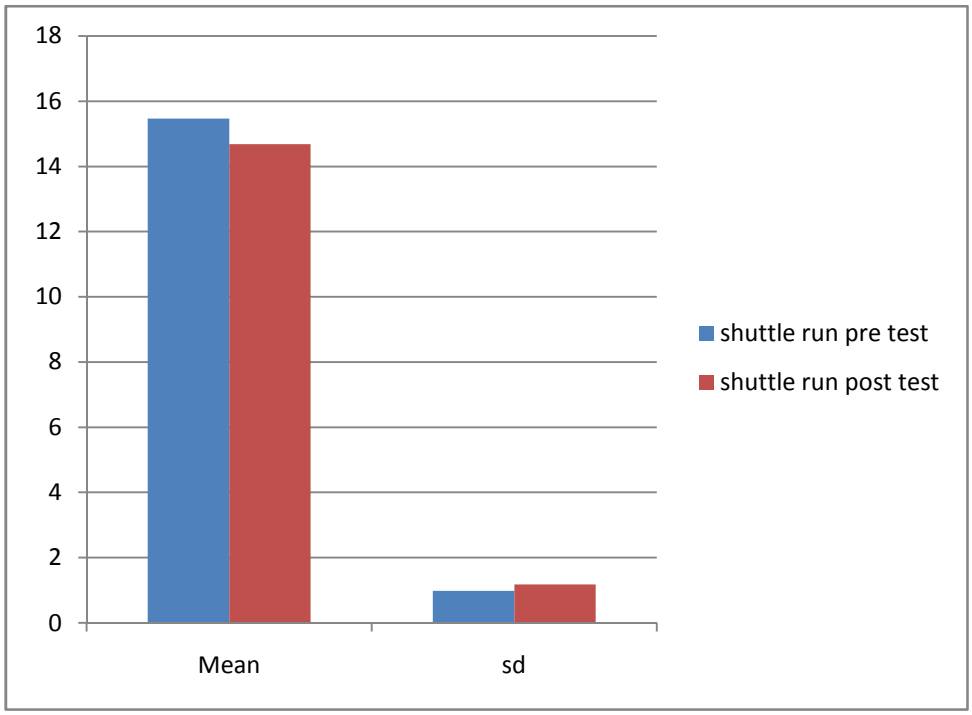
1. Interpretation

For Shuttle Run pre test mean of Experimental Group was 15.4681 while the post test mean was 14.6811 Standard deviation of Experimental Group pre test and Experimental Group Post test was .9814 and 1.1751 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was 11.374 at 99 degree of freedom is much higher than table value. This indicates that for shuttle run test. There exist significant difference between Experimental Group pre Score and Experimental Group post Score.



2. Interpretation

For Shuttle Run test the Pre test mean of Control Group was 15.6134 while the post test mean was 15.5196. Standard deviation of Control Group pre test and Control Group Post test was .8271 and .7957 respectively. Mean difference of Control Group Pre test and Control Group post test was 0.3498. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was 3.794 at 99 degree of freedom is much higher than table value. This indicates that for Shuttle run test. Their exist significant difference between Control Group Pre Score and Control Group Post Score.



3. For Shuttle Run the mean gain of Experimental Group was .8218 and Control Group while the mean gain was .0829 Standard deviation of Experimental Group test and Control Group test was .5859 and .2266 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group test and Control Group test was significant or not. The obtain t-value was 1.761 at 198 degree of freedom is much higher than table value. This indicates that for Shuttle Run test. There exist significant difference between Experimental Group Score and Control Group Score.

4.1. Result on Shuttle Run Analysis

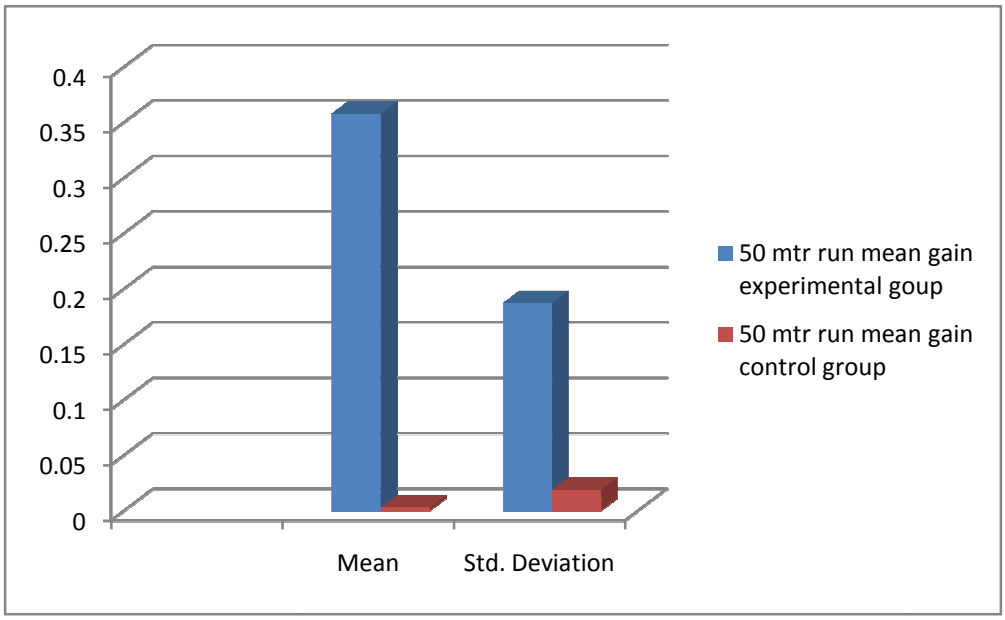
In case of shuttle Run Table 3 shows mean score of pre and post test. Mean score of pre test is 15.6134 sec. and the post test is 15.5196 sec. and pre test SD is .8271 sec. and post test SD is .7957 sec. and from Table 6 mean gain is .0829 sec.

The mean score of pre and post test of the experiment group are 15.4681 sec. And 14.6811 sec. and pre-test SD is .9814 sec., post test SD is .76717 sec. respectively and from Table 6 mean gain is .8218 sec. Thus the within group comparison of the experimental group the result shows there is improvements in the performance of shuttle Run. Comparison of mean gain between the control and the experimental group reveals in Table 4. That the mean gain in case of shuttle Run of the control group is .0829 sec. And the experimental group is .8218 sec. and their't' value is 11.761 sec. From Table 5 which is significant at 0.05 level. Therefore the hypothesis sort in case of Shuttle Run is accepted. Graphically represented in Figure 4.1 has been accepted.

Thus the mean gain in Agility (as assessed by shuttle Run test) is evident in experimental group as compared to the controlled one. Therefore the Ho_3 has been accepted.

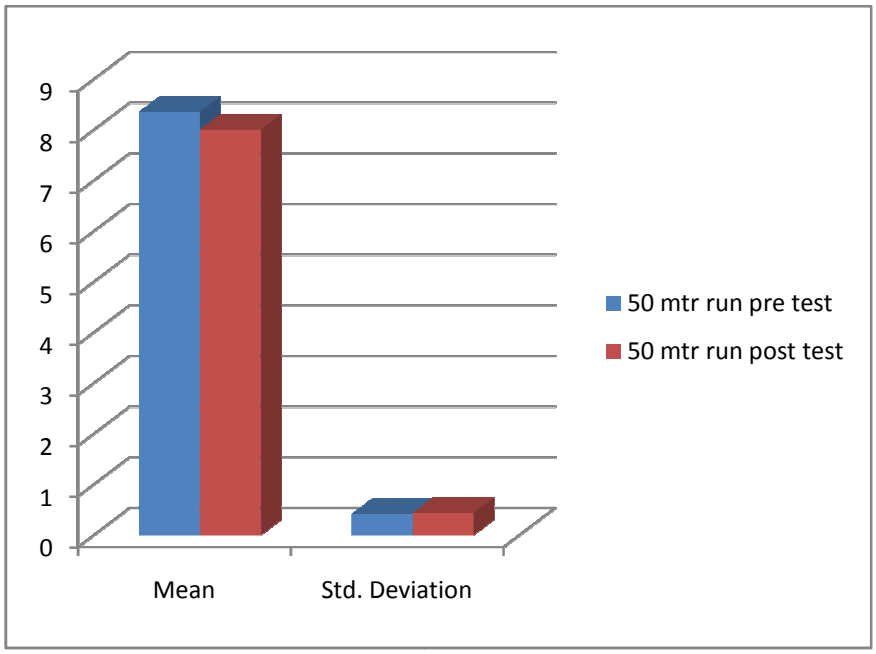
Table – 1

Showing the within group Comparison between Experimental Group – pretest and Experimental Group posttest for selected physical fitness variables



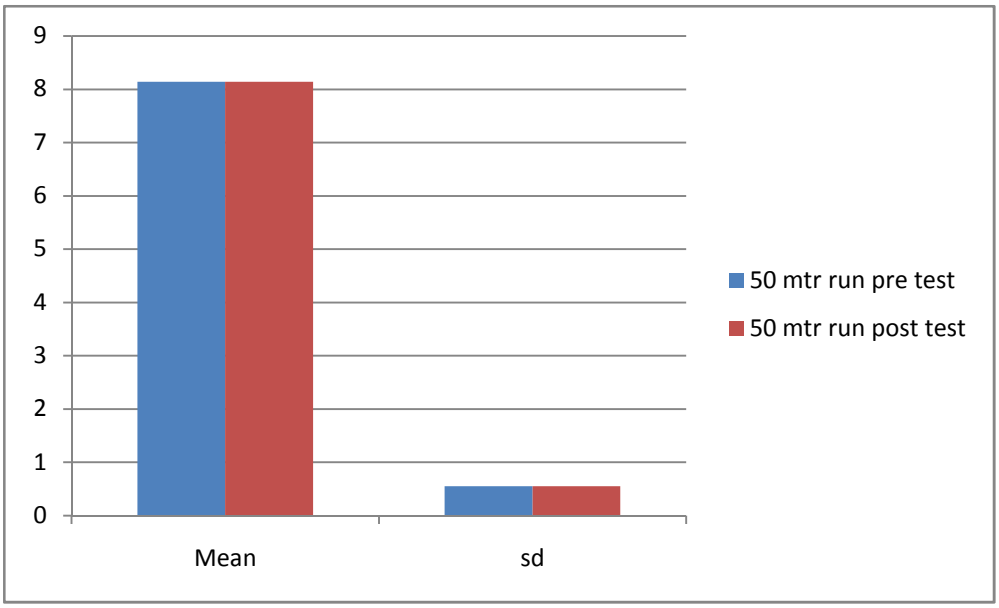
Interpretation

4 For 50 meter Run sprint test the mean gain of Experimental Group was .3578 and Control Group while test mean gain was .0029 Standard deviation of Experimental Group test and Control Group Post mean gain test was .1870 and .1898 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 18.876 at 198 degree of freedom is much higher than table value. This indicates that for 50 meter run test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.



Interpretation

5 For 50 meter Run sprint test the Pre test mean of Experimental Group was 8.3581 while the post test mean was 8.0083. Standard deviation of Experimental Group pre test and Experimental Group Post test was 0.422 and 0.440 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was 0.3498. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was 17.568 at 99 degree of freedom is much higher than table value. This indicates that for 50 meter run test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

6 For 50 meter Run sprint test the Pre test mean of Control Group was 8.1424 while the post test mean was 8.1405 Standard deviation of Control Group pre test and Control Group Post test was .553 and .552 respectively. Mean difference of Control Group Pre test and Control Group post test was .0019. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was .994 at 99 degree of freedom is much higher than table value. This indicates that for 50 meter run test. There exist significant difference between Control Group Pre Score and Control Group Post Score.

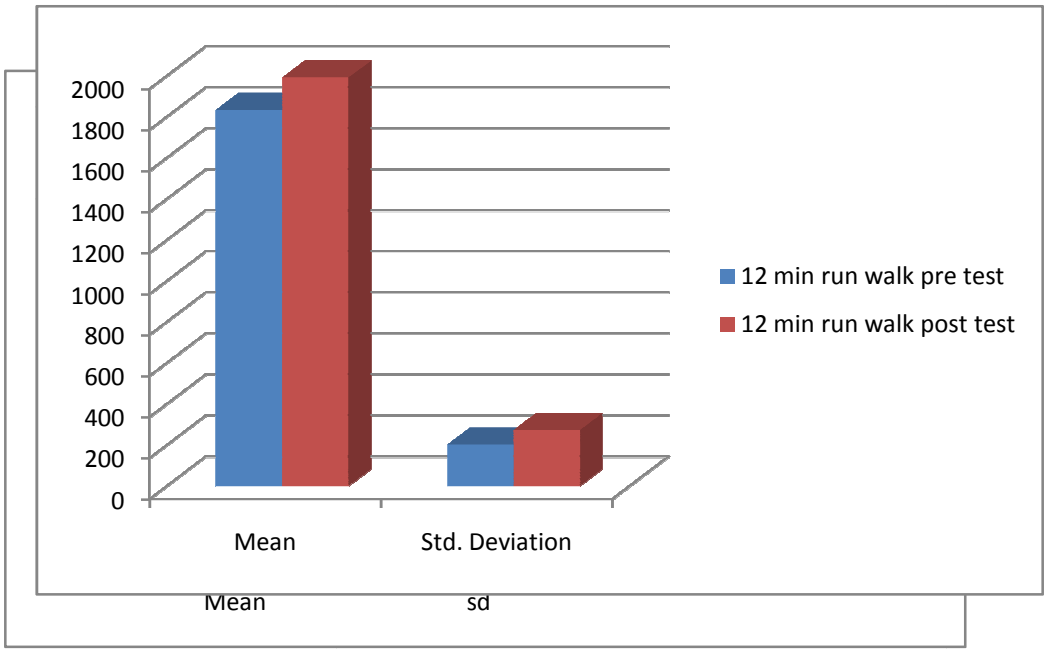
4.2 Result of 50 Meter sprint

In case of 50 Meter sprint Table 1 shows mean score of Control Group pre and post test. Mean score pre test is 8.1424 and the post test is 8.1405 and pre test SD is .55306, and post test SD is .55225

The mean score of pre and post test of the experiment group are 8.3581 and 8.0083 respectively and from Table 6 mean gain is .3578 sec. and pre test SD is 0.422 sec. Post test SD is 0.440sec.

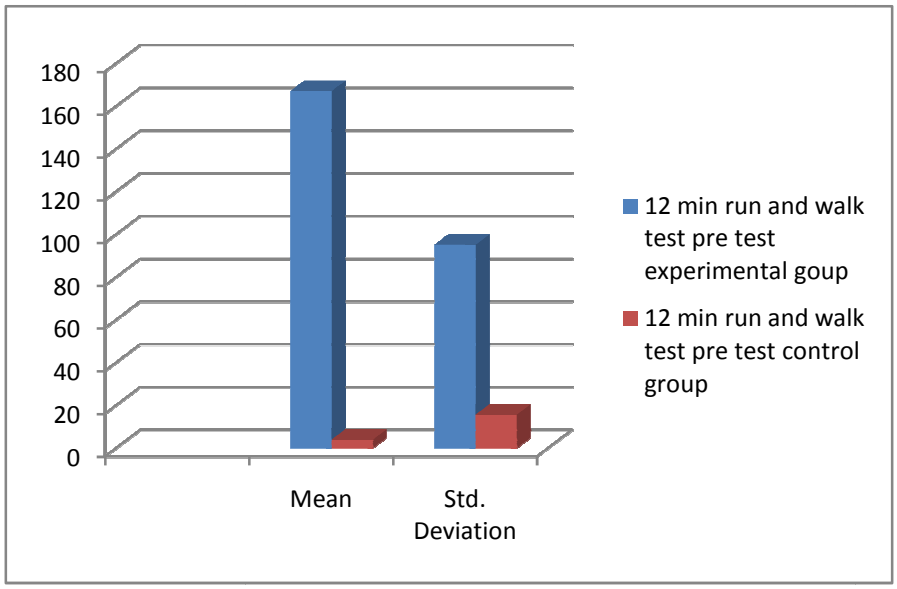
Comparison of mean gain between the control and the experimental group reveals in Table 6. That the mean gain in case of 50 meter sprint of the Control group is .0029 sec. and the experimental group is .3578 sec. and their t' value is 18.876 sec. from Table 5. Which is significant at .000 levels? Therefore the hypothesis Hypotheses sort in case of 50 meter sprint is accepted. Graphically presented in figure 4.1 has been accepted.

Thus the mean gain in speed (as assessed by 50 Meter sprint test) is evident in experimental group as compared to the controlled one. Therefore, the Hypotheses have been accepted.



Interpretation

7 For 12 min run and walk test the Pre test mean of Experimental Group was 1835.25 while the post test mean was 1992.27. Standard deviation of Experimental Group pre test and Experimental Group Post test was 202.195and 270.467 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -157.02. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -11.81 at 99 degree of freedom is much higher than table value. This indicates that for 12 min Run and walk test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.

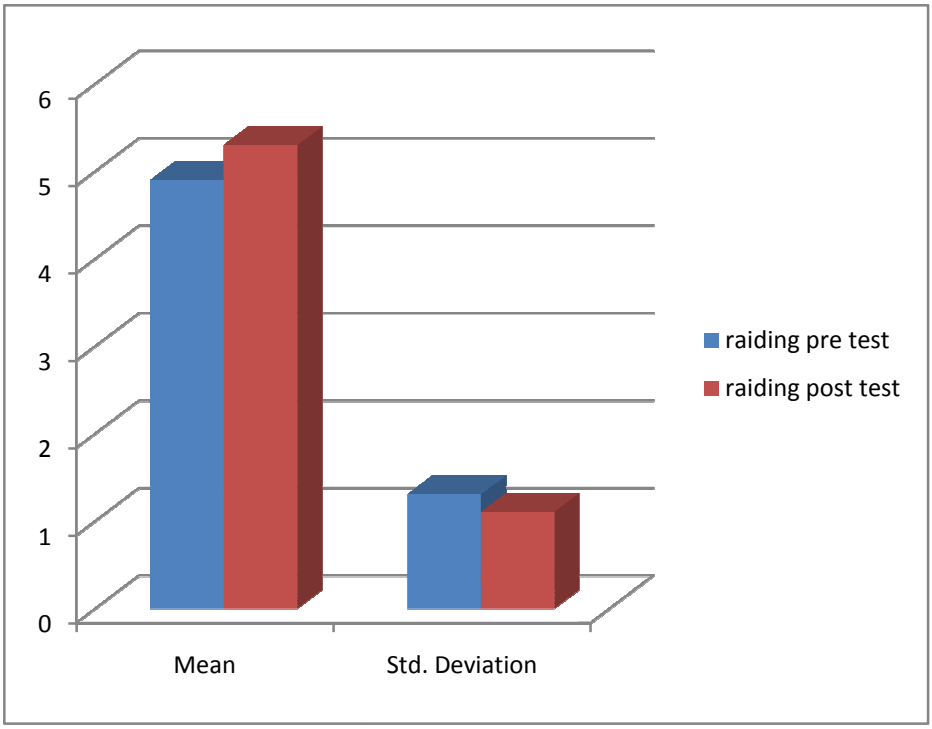


Interpretation

8 For 12 Minute Run and walk pre test mean of Control Group was 1933.98 and Control Group was post test mean was 1937.98 Standard deviation of Control Group pre test and Control Group Post test was 334.47 and 339.06 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was -2.55 at 99 degree of freedom is much higher than table value. This indicates that for 12 Minute Run and walk test. There exist significant difference between Control Group pre Score and Control Group post Score.

Interpretation

9 For 12 Minute Run and walk test the mean gain of Experimental Group was 167.12 and Control Group while test mean gain was 4.00 Standard deviation of Experimental Group test and Control Group test was 95.22 and 15.66 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group Mean gain test and Control Group Mean gain test was significant or not. The obtain t-value was 16.901 at 198 degree of freedom is much higher than table value. This indicates that for 12 Minute Run and walk test. There exist significant difference between Experimental Group Mean gain Score and Control Group Mean gain Score.



4.3 Result on 12 Min Run and Walk

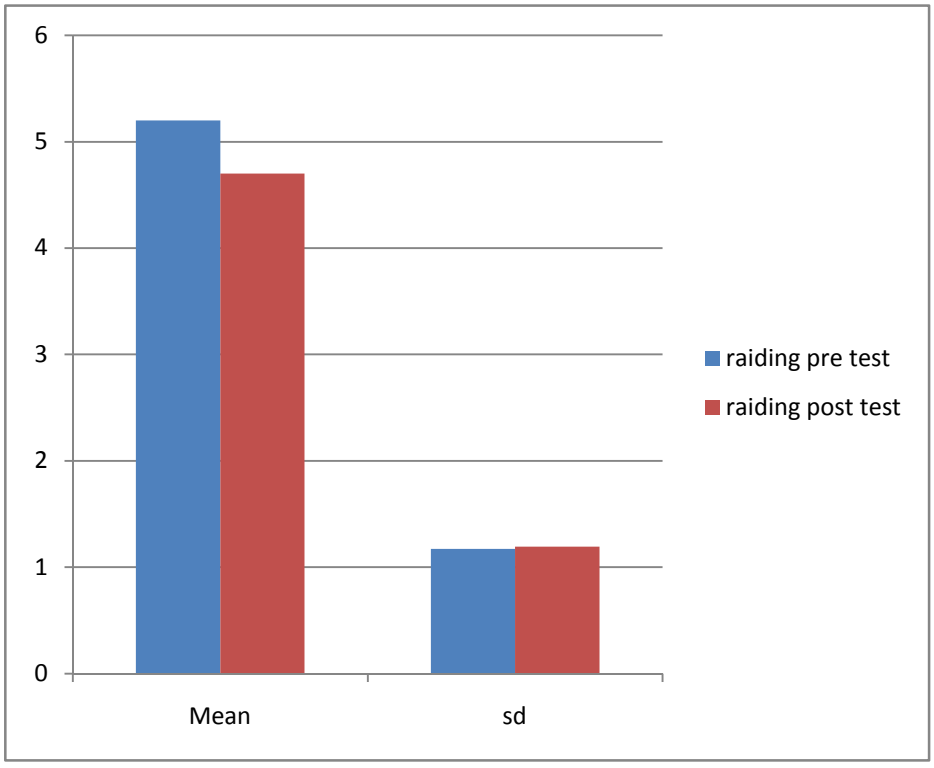
In case of 12 Min run and walk Table 3 shows mean score of Control Group pre and post test. Mean score of pre test is 1933.9800 Mts. and the post test is 1937.9800 Mts.

The mean score of pre and post test of the experiment group are 1835.25 Mts. and 1992.27 Mts. and pre test SD is 202.12 Mts. and post test SD is 270.46 Mts. respectively. And their vailue.-11.81

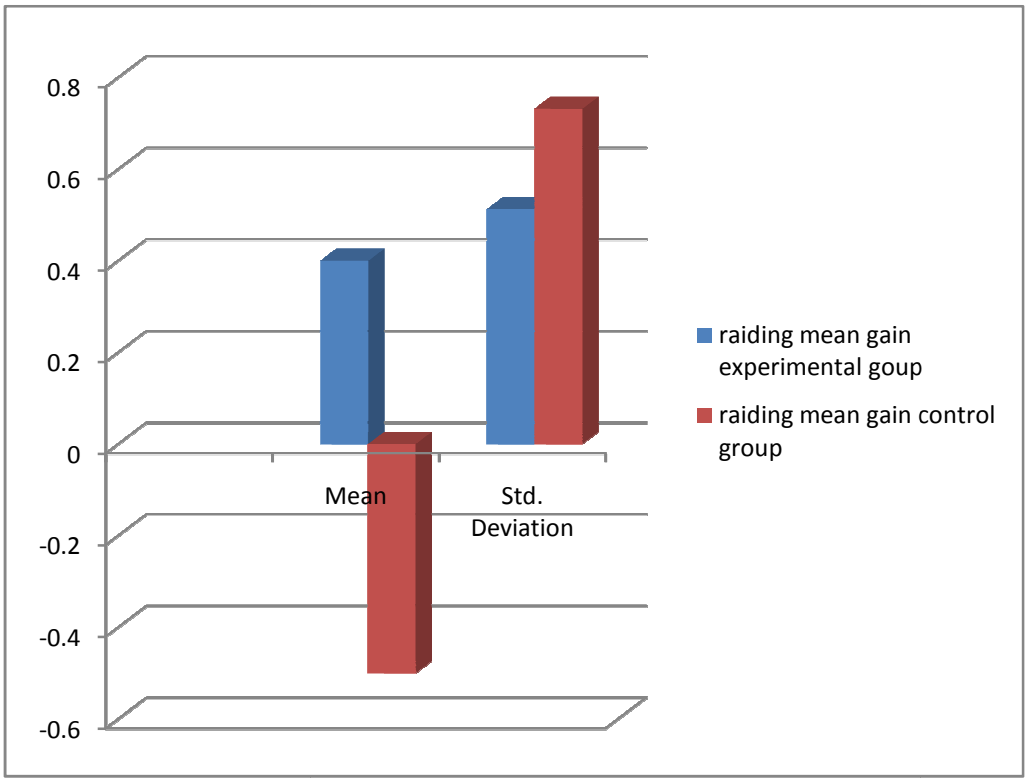
Comparison of mean gain between the control and the experimental group reveals in Table 4 that the mean gain in case of 12 Min Run and walk of the control group is 4.00 Mts. and the experimental group is 167.12 Mts. and their 't' value is 16.90 Mts. from Table 5 which is significant at .00 level.

Therefore, the hypothesis sort in case of 12 Min Run and walk is accepted. Graphically represented in figure No.4.2.

Thus the mean gain in Endurance (as assessed by 12 min Run and walk test) is evident in experimental group as compared to the controlled one. Therefore the $Hypotheses_2$ has been accepted.



Interpretation 10 For Raiding test the Pre test mean of Experimental Group was 4.90 while the post test mean was 5.30. Standard deviation of Experimental Group pre test and Experimental Group Post test was 1.307 and 1.106 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -.400. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -7.80 at 99 degree of freedom is much higher than table value. This indicates that for Raiding test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

11 For Raiding test the Pre test mean of Control Group was 5.20 while the post test mean was 4.70. Standard deviation of Control Group pre test and Control Group Post test was 1.172 and 1.193 respectively. Mean difference of Control Group Pre test and Control Group post test was .500. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was 6.634 at 99 degree of freedom is much higher than table value. This indicates that for Raiding test. There exist significant difference between Control Group Pre Score and Control Group Post Score.

Interpretation

12 For Raiding test the mean gain of Experimental Group was .40 and Control Group while test mean gain was -.50 Standard deviation of Experimental Group test and Control Group test was .512 and .732 respectively. T-test was employed at 0.05 level of

significance to find out whether the difference between Experimental Group Mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 10.075 at 198 degree of freedom is much higher than table value. This indicates that for Raiding test. There exist significant difference between Experimental Group Score and Control Group Score.

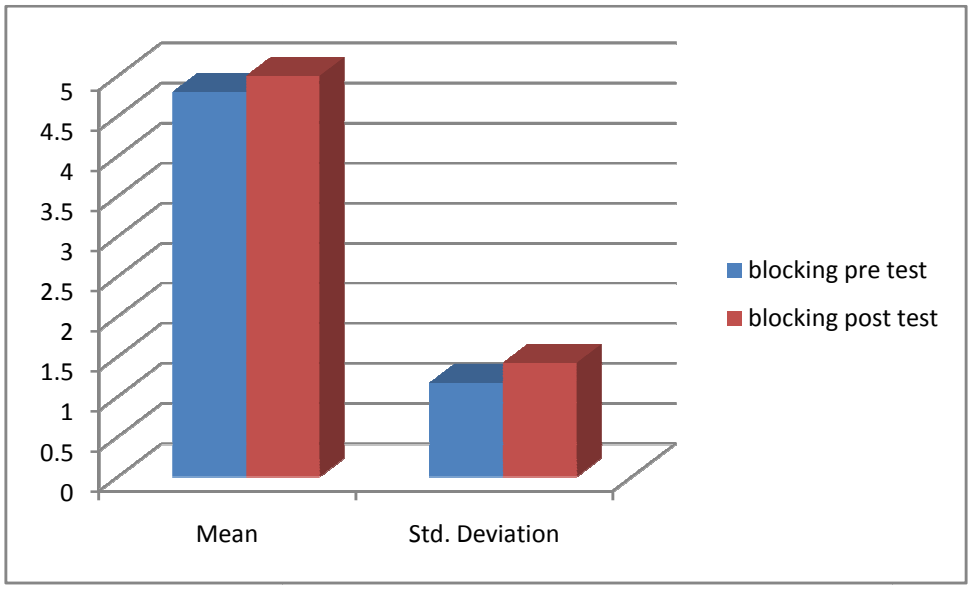
4. 4. Result on Raiding Analysis

In case of Raiding Table 3 shows mean score of Control Group pre and post test. Mean score of pre test is 5.20. And the post test is 4.70 and pre test SD is .1.172 and post test SD is .1.193. And from Table 6 mean gain is .50

The mean score of pre and posttest of the experiment group are 4.90. And 5.30.and pre-test SD is .1.307. Post test SD is 1.106 numbers. Respectively and from Table 6 mean gain is -.40. Thus the within group comparison of the experimental group the result shows there is improvements in the performance of Raiding.

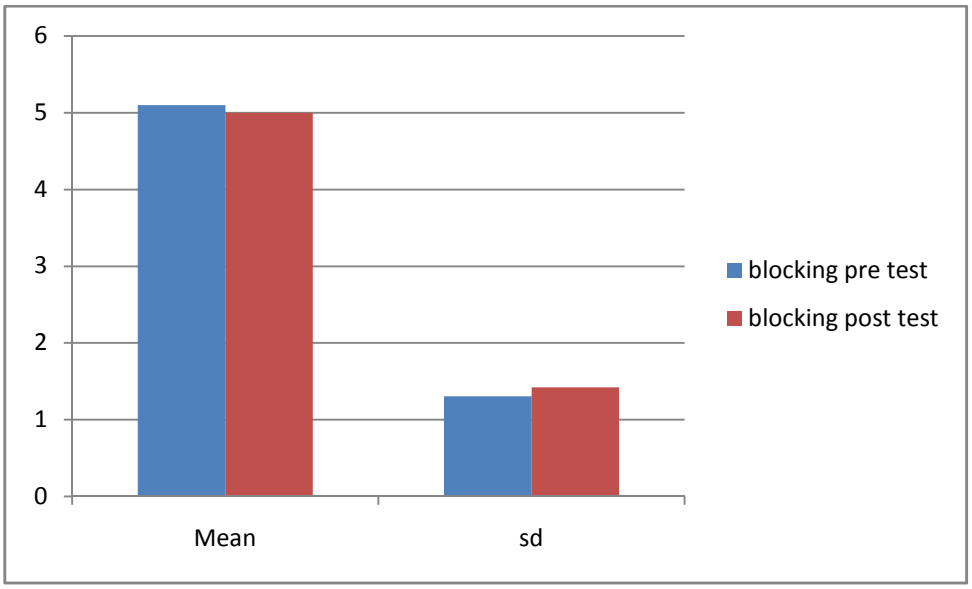
Comparison of mean gain between the control and the experimental group reveals in Table 4. That the mean gain in case of Raiding of the control groupis-.50. And the experimental group is .40. And their't' value is 10.075. From Table 5 which is significant at .000 level. Their fore the hypothesis sort in case of Raiding is accepted. Graphically represented in Figure 4.1 has been accepted.

Thus the mean gain in raiding skill (as assessed by raiding test) is evident in experimental group as compared to the controlled one. Therefore the Ho_3 has been accepted.



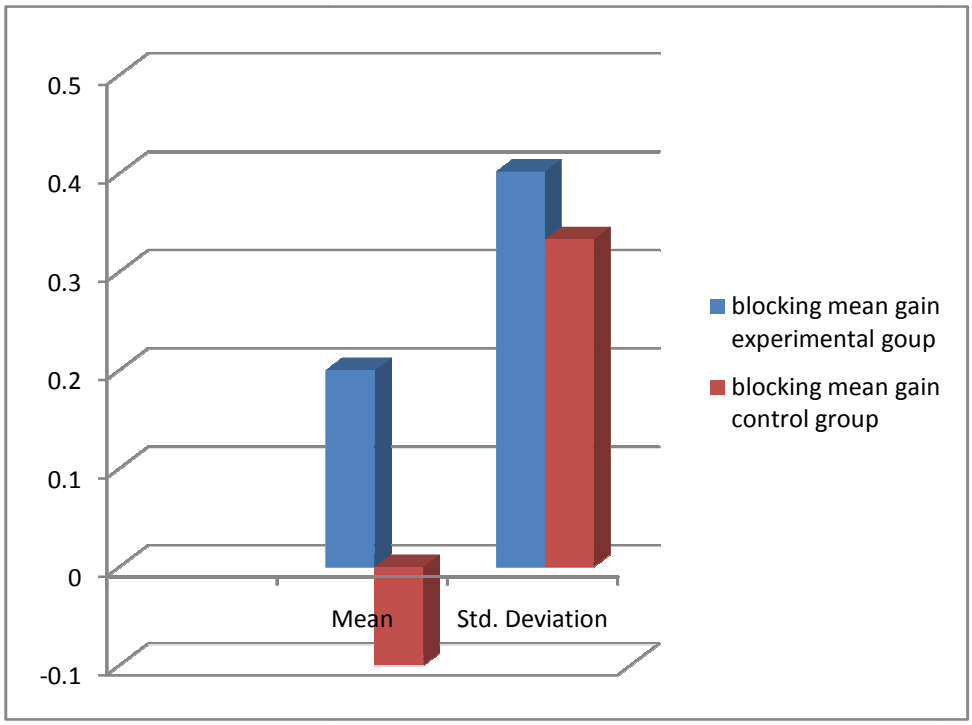
Interpretation

13 For blocking test the Pre test mean of Experimental Group was 4.80 while the post test mean was 5.00. Standard deviation of Experimental Group pre test and Experimental Group Post test was 1.172 and 1.421 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -.200. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -4.97 at 99 degree of freedom is much higher than table value. This indicates that for blocking test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

14 For blocking test the Pre test mean of Control Group was 5.10 while the post test mean was 5.00. Standard deviation of Control Group pre test and Control Group Post test was 1.307 and 1.421 respectively. Mean difference of Control Group Pre test and Control Group post test was .100. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was 3.00 at 99 degree of freedom is much higher than table value. This indicates that for blocking test. There exist significant difference between Control Group Pre Score and Control Group Post Score.



Interpretation

15 For Blocking test the mean gain of Experimental Group was .20 and Control Group while test mean gain was -.10 Standard deviation of Experimental Group mean gain test and Control Group mean gain test was .402 and .333 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 5.745 at 198 degree of freedom is much higher than table value. This indicates that for blocking test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.

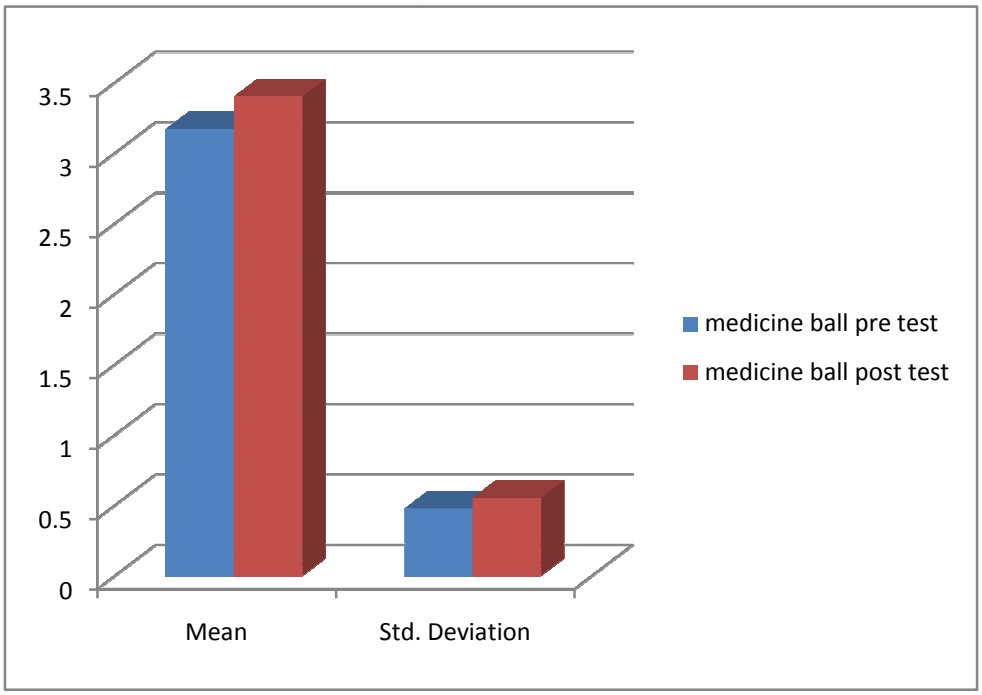
4.5 Result of Blocking

Table 1 shows mean score of Control Group pre and post test. Mean score pre test is 5.10. And the post test is 5.00. And pre test SD is 1.307., and post test SD is 1.421.

The mean score of pre and post test of the experiment group are 4.80. And5.00. respectively and from Table 6 mean gain is .20 and pre test SD is 1.172 post tests SD is .1.421

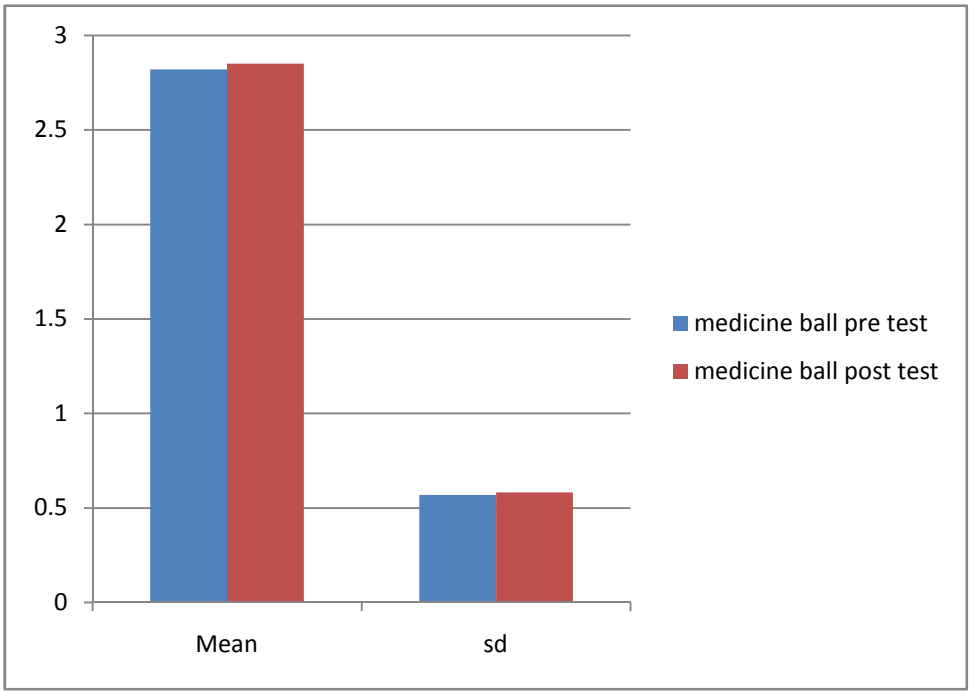
Comparison of mean gain between the control and the experimental group reveals in Table 6. That the mean gain in case of Blocking of the Control group is -10. And the experimental group is.20 and their't' value is 5.745 from Table 5. Which is significant at .000 levels? Therefore the hypothesis $_1$ sort in case of Blocking is accepted. Graphically presented in figure 4.1 has been accepted.

Thus the mean gain in Blocking (as assessed by blocking test) is evident in experimental group as compared to the controlled one. Therefore, the Ho_1 has been accepted.



Interpretation

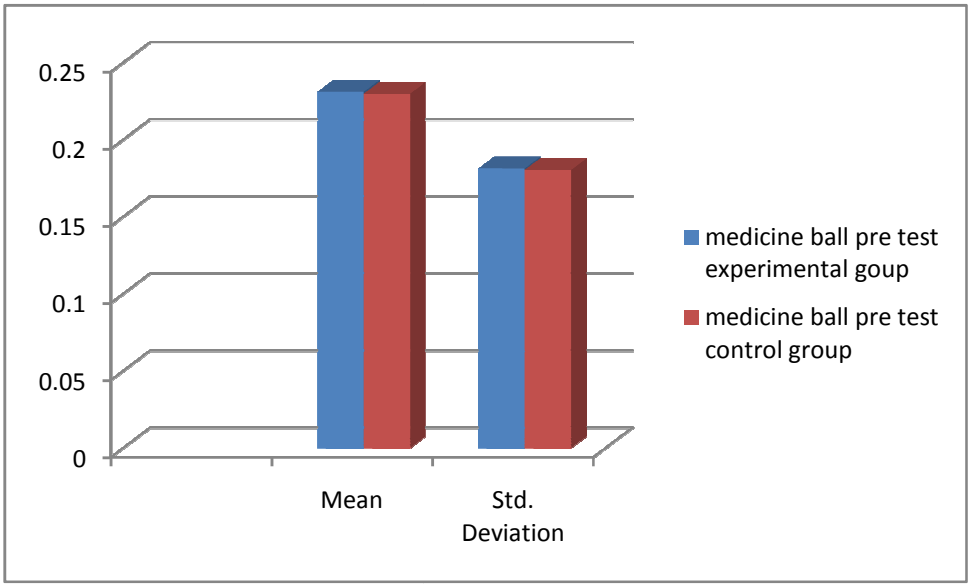
16 For Medicine ball test the Pre test mean of Experimental Group was 3.16 while the post test mean was 3.40. Standard deviation of Experimental Group pre test and Experimental Group Post test was .4762 and .5522 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -.2312. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -12.69 at 99 degree of freedom is much higher than table value. This indicates that for Medicine ball test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

17 For Medicine ball test the Pre test mean of Control Group was 2.82 while the post test mean was 2.82. Standard deviation of Control Group pre test and Control Group Post test was .568 and .582 respectively. Mean difference of Control Group Pre test and Control Group post test was -.030. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was -5.339 at 99 degree of freedom is

much higher than table value. This indicates that for Medicine ball test. There exist significant difference between Control Group Pre Score and Control Group Post Score.



Interpretation 8

18 For Medicine Ball test the mean gain of Experimental Group was .2313 and Control Group while test mean gain was .2300 Standard deviation of Experimental Group test and Control Group mean gain test was .1815 and .1805 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 10.55 at 198 degree of freedom is much higher than table value. This indicates that for Medicine Ball test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.

4.6 Result on Medicine ball

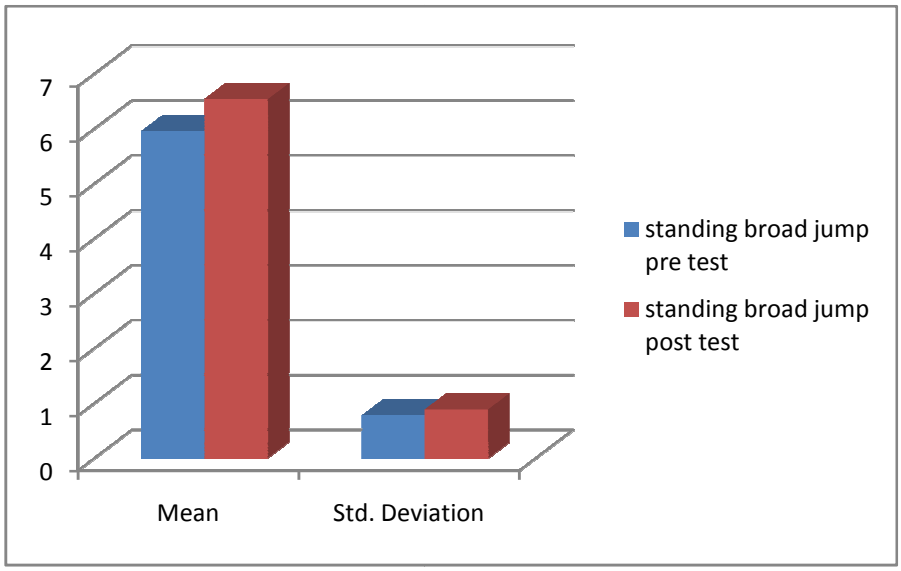
In case of Medicine ball Medicine ball Table 3 shows mean score of pre and post test. Mean score of pre test is 2.8201. And the post test is 2.8206

The mean score of pre and post test of the experiment group are 3.1694. And 3.4006 and pre test SD is .47624. And post test SD is .55225. Respectively.

Comparison of mean gain between the control and the experimental group reveals in Table 4 that the mean gain in case of Medicine ball of the control group is .305.and the experimental group is .2313 Mts. and their 't' value is 10.55. From Table 5 which is significant at .00level.

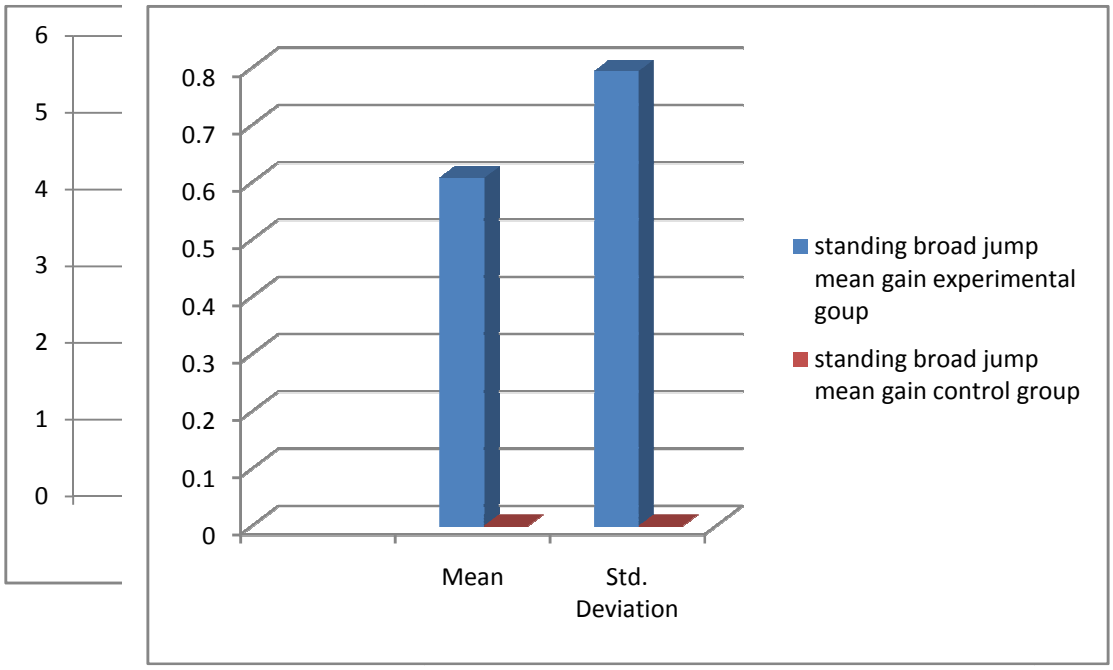
Therefore, the hypothesis sort in case of Medicine ball is accepted. Graphically represented in figure No.4.2.

Thus the mean gain in Aram strength (as assessed by Medicine ball test) is evident in experimental group as compared to the controlled one. Therefore the hypotheses $_2$ have been accepted.



Interpretation

19 For standing broad jump test the Pre test mean of Experimental Group was 5.95 while the post test mean was 6.54 Standard deviation of Experimental Group pre test and Experimental Group Post test was .785 and .888 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -.5850. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -11.04 at 99 degree of freedom is much higher than table value. This indicates that for standing broad jump test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

20 For standing broad jump test the Pre test mean of Control Group was 5.4137 while the post test mean was 5.3737. Standard deviation of Control Group pre test and Control Group Post test was .649 and .829 respectively. Mean difference of Control Group Pre test and Control Group post test was .040. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was 1.00 at 99 degree of freedom is much higher than table value. This indicates that for standing broad jump test. There exist significant difference between Control Group Pre Score and Control Group Post Score.

Interpretation

21 For Standing Broad Jump test the mean gain of Experimental Group was .6079 and Control Group while test mean gain was .00 Standard deviation of Experimental Group test and Control Group mean gain test was .7940 and .00 respectively. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant

or not. The obtain t-value was 7.656 at 198 degree of freedom is much higher than table value. This indicates that for Standing Broad Jump test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.

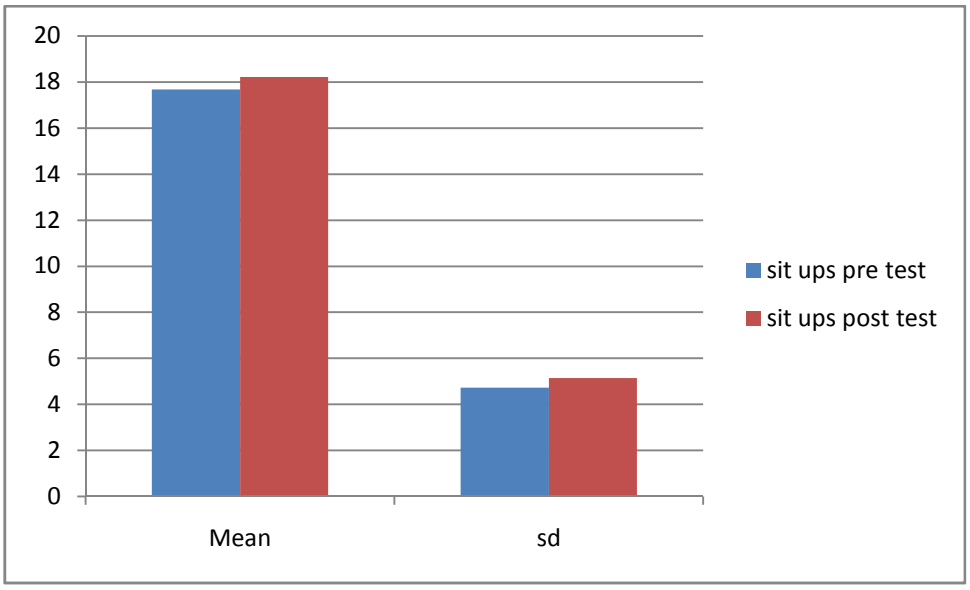
4.7 Result on standing broad jump Analysis

In case of Standing broad jump Table 3 shows mean score of Control Group pre and post test. Mean score of pre test is5.4135. And the post test is5.3737. And pre test SD is.64956. and post test SD is .082951. And from Table 6 mean gain is .00.

The mean score of pre and posttest of the experiment group are 5.9582. And6.5432. and pre-test SD is .78516, post test SD is .888. Respectively and from Table 6 mean gain is -.5850 Thus the within group comparison of the experimental group the result shows there is improvements in the performance of Standing broad jump.

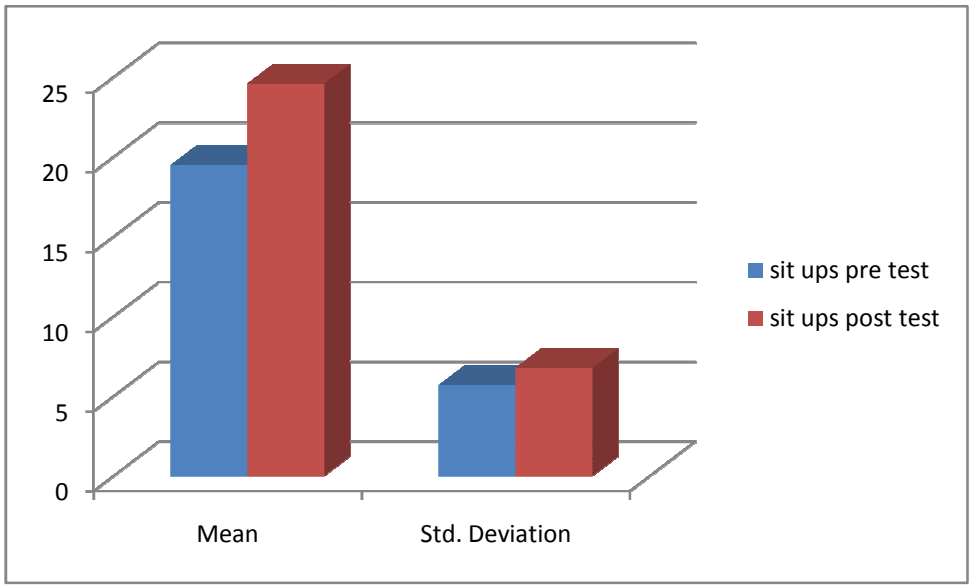
Comparison of mean gain between the control and the experimental group reveals in Table 4. That the mean gain in case of Standing broad jump of the control group is .000. And the experimental group is .6079. And their 't' value is 7.656 sec. From Table 5 which is significant at .00 level. Their fore the hypothesis sort in case of standing broad jump is accepted. Graphically represented in Figure 4.1 has been accepted.

Thus the mean gain in Leg strength (as assessed by standing broad jump test) is evident in experimental group as compared to the controlled one. Therefore the Ho_3 has been accepted.



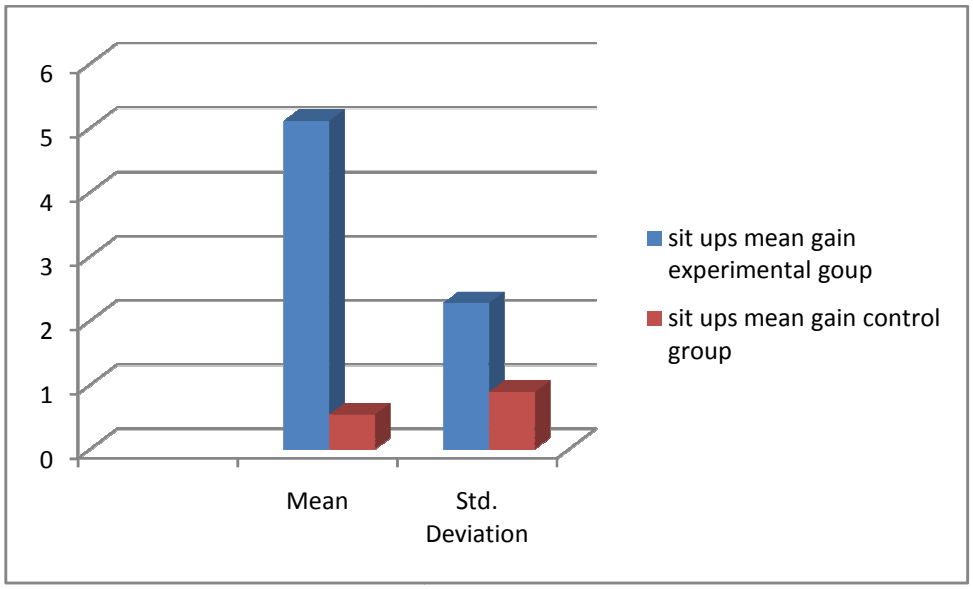
Interpretation

22 For sit ups test the Pre test mean of Control Group was 17.68 while the post test mean was 18.22. Standard deviation of Control Group pre test and Control Group Post test was 4.722 and 5.144 respectively. Mean difference of Control Group Pre test and Control Group post test was -.540. T-test was employed at 0.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was -6.05 at 99 degree of freedom is much higher than table value. This indicates that for sit ups test. There exist significant difference between Control Group Pre Score and Control Group Post Score.



Interpretation

23 For sit ups test the Pre test mean of Experimental Group was 19.50 while the post test mean was 24.60. Standard deviation of Experimental Group pre test and Experimental Group Post test was 5.711 and 6.781 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -.5100. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was -22.40 at 99 degree of freedom is much higher than table value. This indicates that for sit ups test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

24 For Sit ups test the mean gain of Experimental Group was 5.11 and Control Group while test mean gain was .54 Standard deviation of Experimental Group mean gain test and Control Group was mean gain test was 2.274 and .892 respectively. T-test was employed at .05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 18.710 at 198 degree of freedom is much higher than table value. This indicates that for Sit ups test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.

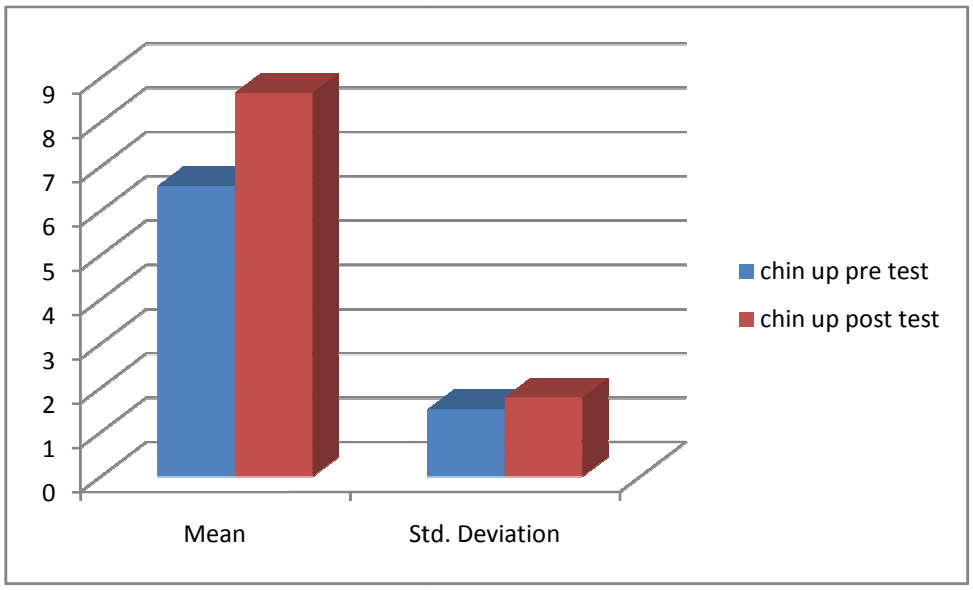
4.8 Result of Sit ups

In case of Sit ups Table 1 shows mean score of Control Group pre and post test. Mean score pre test is 17068. And the post test is 18.22. And pre test SD is 4.722., and post test SD is 5.144.

The mean score of pre and post test of the experiment group are 19.50 and 24.60 respectively and from Table 6 mean gain is -.510 and pre test SD is 5.711. Post test SD is 6.781.

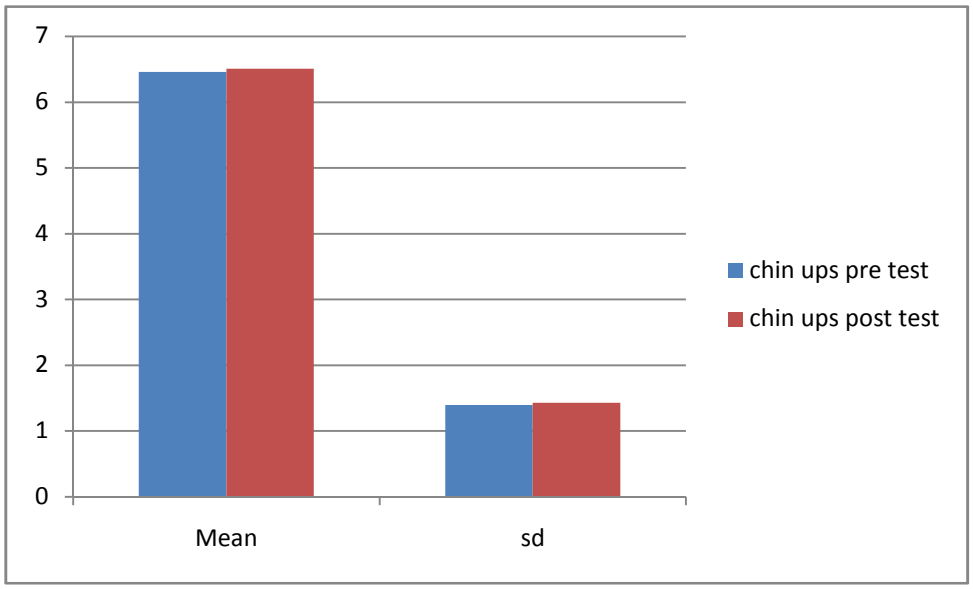
Comparison of mean gain between the control and the experimental group reveals in Table 6. That the mean gain in case of Sit ups of the Control group is .54 and the experimental group is 5.11 and their't' value is 18.710 from Table 5. Which is significant at .05 levels? Therefore the hypothesis Ho_1 sort in case of Sit ups is accepted. Graphically presented in figure 4.1 has been accepted.

Thus the mean gain in Abdomen strength (as assessed by Sit ups test) is evident in experimental group as compared to the controlled one. Therefore, the Ho_1 has been accepted.



Interpretation

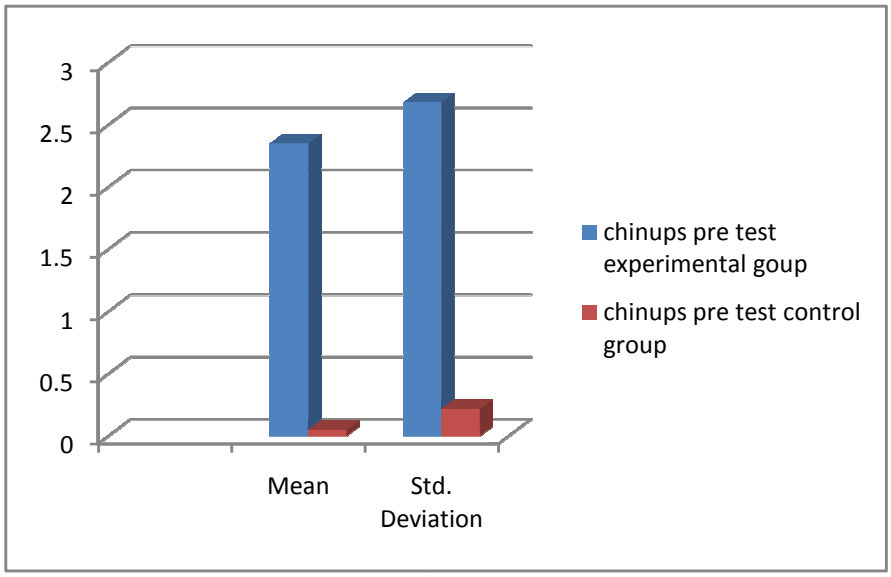
25 For chin ups test the Pre test mean of Experimental Group was 6.57 while the post test mean was 8.67. Standard deviation of Experimental Group pre test and Experimental Group Post test was 1.5194 and 1.787 respectively. Mean difference of Experimental Group Pre test and Experimental Group post test was -2.100. T-test was employed at 0.05 level of significance to find out whether the difference between Experimental Group pre test and Experimental Group Post test was significant or not. The obtain t-value was 29.85 at 99 degree of freedom is much higher than table value. This indicates that for chin ups test. There exist significant difference between Experimental Group Pre Score and Experimental Group Post Score.



Interpretation

26 For Chin ups test the Pre test mean of Control Group was 6.46 while the post test mean was 6.51. Standard deviation of Control Group pre test and Control Group Post test was 1.396 and 1.432 respectively. Mean difference of Control Group Pre test and Control Group post test was -.050. T-test was employed at.05 level of significance to find out whether the difference between Control Group pre test and Control Group Post test was significant or not. The obtain t-value was -2.283 at 99 degree of freedom is much higher

than table value. This indicates that for Chin ups test. There exist significant difference between Control Group Pre Score and Control Group Post Score.



Interpretation

27 For Chin Ups test the mean gain of Experimental Group and Control Group was 2.35 while test mean gain was .05 Standard deviation of Experimental Group test and Control Group mean gain test was 2.67 and .21 respectively. T-test was employed at .05 level of significance to find out whether the difference between Experimental Group mean gain test and Control Group mean gain test was significant or not. The obtain t-value was 8.55 at 198 degree of freedom is much higher than table value. This indicates that for Chin Ups test. There exist significant differences between Experimental Group mean gain Score and Control Group mean gain Score.

4.9 Result on Chin ups

In case of Chin ups Table 3 shows mean score of Control Group pre and post test. Mean score of pre test is 6.46 and the post test is 6.51

The mean score of pre and post test of the experiment group are 6.51 and 8.67. And pre test SD is 1.519 and post test SD is 1.787 respectively.

Comparison of mean gain between the control and the experimental group reveals in Table 4 that the mean gain in case of Chin ups of the control group is .05. And the experimental group is 2.35.and their't' value is 8.555 from Table 5 which is significant at .05 level.

Therefore, the hypothesis sort in case of Chin ups is accepted. Graphically represented in figure No.4.2.

Thus the mean gain in Bicep strength (as assessed by Chin ups test) is evident in experimental group as compared to the controlled one. Therefore the HO_2 has been accepted.

4.10 The result of the test conducted has been summarized as under:

The performance of 50 Meter sprint revealed that the experimental ground could show significant superiority over the control group in 50 Meter sprint test (Table 3 and 5). The result of within group comparison revealed that the control group could not record the performance gain in speed ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in speed of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the general speed ability as assessed by the 50 Meter sprint test.

The result on 12 Min Run and walk was not equally interesting the subjects of the control group not to record higher performance in the within group comparison But in group

comparison it is significant. However the subjects of experimental group could reveal higher performance in 12 Min Run and walk in both the within group comparison and in between group comparison. Thus, experimental group could show significant superiority over the control group in 12 Min Run and walk test. (3and5). the appearance of such result is quite logical, because the players in weight training programme to do continuously and run frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in Endurance as assessed by the 12 Min run and walk test.

The result of the shuttle run, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the control group in shuttle run Test. (Table 3 and 5). The exposure of weight training programme was to improve agility among the subjects of experimental group among the subjects of experimental group the subjects of experimental group, however such gain in performance was useful to improve agility among the subjects of experiment and control group.

The result helps to interpret that the experimental group showed significant superiority than the control group. This is turn, helps to interpret that the weight training programme for 1 year period could improve agility as assessed by the "Shuttle Run Test'.

The above result helps to test the formulated hypotheses. The results cited above indicate that weight training programme for a period of 1 year in this study could help to improve the speed, agility, and endurance of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

4.11 Discussion of Results

4.11.1 Discussion of Result on 50 Meter sprint Test

It was evident from the result on 50 Meter sprint test that although the control group not to showed significant improvement within group comparison, however, experimental group

is maintained its superiority over the control group in speed. (Table3and5). The exposure weight training programme was useful to improve speed among the subjects of experimental group; however, such gain in performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the players need a speed. Therefore, experimental grope improve their speed ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve speed as assessed by the 50 Meter sprint test.

4.11.2 Discussion of Result on 12 Min Run walks

It was evident from the result on 12 min Run and Walk test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Endurance (Table 3 and 5). The exposure of weight training programme was useful to improve Endurance. Among the subject of experimental group, however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the player needs a good level of endurance he can run much more time. Therefore, experimental group players improve their ability of Endurance. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Endurance as assessed by the 12 Min Run and walk.

4.11.3 Discussion of Results on Shuttle Run Test

It was evident from the result on shuttle Run Test that although the experimental group and the control group showed significant improvement within group showed significant improvement within the group comparison. However, it also maintained its superiority over the control group in agility. (Table3and5). The exposure of weight circuit training programme was useful to improve agility among the subjects of experimental group. However, such gain in

performance was not very good than experimental groups result among the subject of control group. The appearance of such result might have happened because during weight training programme, the players are frequently using dodging tactics which need a good level of agility. Moreover, the chase in Kabaddi also acts according to the player's movement. Therefore, both these players improved their ability in agility. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that the weight training programme for 1 year period could improve agility as assessed by the shuttle Run Test.

4.12 The result of the test conducted has been summarized as under:

The performance of raiding revealed that the experimental ground could show significant superiority over the control group in test (Table 3 and 5). The result of within group comparison revealed that the control group could not record the performance gain in raiding ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in raiding of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the general raiding ability as assessed by the raiding test.

The result on blocking was not equally interesting the subjects of the control group not to record higher performance in the within group comparison But in group comparison it is significant. However the subjects of experimental group could reveal higher performance in blocking in both the within group comparison and in between group comparison. Thus, experimental group could show significant superiority over the control group in blocking test. (3and5). the appearance of such result is quite logical, because the players in weight training programme to do continuously and blocking frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in blocking as assessed by the blocking test.

The result of the medicine ball, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the

control group in medicine ball Test. (Table 3 and 5). The exposure of weight training programme was to improve hand strength among the subjects of experimental group among the subjects of experimental group the subjects of experimental group, however such gain in performance was useful to improve hand strength among the subjects of experiment and control group.

The result helps to interpret that the experimental group showed significant superiority than the control group. This is turn, helps to interpret that the weight training programme for 1 year period could improve hand strength as assessed by the " medicine ball Test'.

The above result helps to test the formulated hypotheses. The results cited above indicate that weight training programme for a period of 1 year in this study could help to improve the raiding, and Blocking, hand strength of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

4.12.1 Discussion of Results

4.12.2 Discussion of Results on Raiding

It was evident from the result on Raiding Test that although the experimental group and the control group showed significant improvement within group showed significant improvement within the group comparison. However, it also maintained its superiority over the control group in Raiding. (Table 3 and 5). The exposure of weight circuit training programme was useful to improve Raiding among the subjects of experimental group. However, such gain in performance was not very good than experimental groups result among the subject of control group. The appearance of such result might have happened because during weight training programme, the players are frequently using dodging tactics which need a good level of Raiding. Moreover, the chase in Kabaddi also acts according to the player's movement. Therefore, both these players improved their ability in Raiding. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that the weight training programme for 1 year period could improve raiding as assessed by the raiding Test.

4.12.3 Discussion of Result on Blocking

It was evident from the result on blocking test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Blocking (Table 3 and 5). The exposure of weight training programme was useful to improve Blocking. Among the subject of experimental group, however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the player needs a good level of Blocking he can block much more time. Therefore, experimental group players improve their ability of Blocking. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve blocking as assessed by the Blocking test

4.12.4 Discussion of Result on Medicine ball

4.12.4

It was evident from the result on Medicine ball test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in hand strength. (Table3and5). The exposure weight training progamme was useful to improve hand strength among the subjects of experimental group; however, such gaining performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the player needs hand strength. Therefore, experimental grope improve their hand strength ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve hand strength as assessed by the Medicine ball test.

4.13 The result of the test conducted has been summarized as under:

The performance of Standing Broad Jump revealed that the experimental ground could show significant superiority over the control group in test (Table 3 and 5). The result of

within group comparison revealed that the control group could not record the performance gain in leg strength ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in Leg Strength of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the Leg Strength ability as assessed by the Standing Broad Jump test.

The result on Sit ups was not equally interesting the subjects of the control group not to record higher performance in the within group comparison But in group comparison it is significant. However the subjects of experimental group could reveal higher performance in Sit ups in both the within group comparison and in between group comparison. Thus, experimental group could show significant superiority over the control group in Sit ups test. (3and5). the appearance of such result is quite logical, because the players in weight training programme to do continuously and Sit ups frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in Stomach Strength as assessed by the Sit ups test.

The result of the Chin ups, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the control group in Chin ups Test. (Table 3 and 5). The exposure of weight training programme was to improve bicep strength among the subjects of experimental group among the subjects of experimental group the subjects of experimental group, however such gain in performance was useful to improve bicep strength among the subjects of experiment and control group.

The result helps to interpret that the experimental group showed significant superiority than the control group. This is turn, helps to interpret that the weight training programme for 1 year period could improve bicep strength as assessed by the " Chin ups Test'.

The above result helps to test the formulated hypotheses. The results cited above indicate that weight training programme for a period of 1 year in this study could help to improve the Leg, Stomach and Bicep strength of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

4.13.1 Discussion of Results

4.13.2 Discussion of Result on Standing Broad Jump

It was evident from the result on Standing Broad Jump test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Leg strength. (Table3and5). The exposure weight training progamme was useful to improve Leg strength among the subjects of experimental group; however, such gaining performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the player needs Leg strength. Therefore, experimental grope improve their Leg strength ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Leg strength as assessed by the Standing Broad Jump test.

4.13.3 Discussion of Result on Sit Ups

It was evident from the result on Sit Ups test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Sit Ups (Table 3 and 5). The exposure of weight training programme was useful to improve Stomach Strength. Among the subject of experimental group, however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the player needs a good level of Sit Ups he can Sit Ups much more time. Therefore, experimental group players improve their ability of Stomach Strength. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Stomach Strength as assessed by the Sit Ups.

4.13.4 Discussion of Results on Chin ups

It was evident from the result on Chin Ups Test that although the experimental group and the control group showed significant improvement within group showed significant improvement within the group comparison. However, it also maintained its superiority over the control group in Chin Ups. (Table 3 and 5). The exposure of weight circuit training programme

was useful to improve bicep strength among the subjects of experimental group. However, such gain in performance was not very good than experimental groups result among the subject of control group. The appearance of such result might have happened because during weight training programme, the players are frequently using tactics which need a good level of Chin Ups. Moreover, the chase in Kabaddi also acts according to the player's movement. Therefore, both these players improved their ability in bicep strength. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that the weight training programme for 1 year period could improve bicep strength as assessed by the Chin Ups Test.

Chapter – V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Kabaddi is a game of Indian origin and it is popular in most of the Asian countries. This game requires less financial involvement and side by side it provides to achieve a good level of health and physical fitness. In spite of its popularity a very little research work has been conducted on this game 'Kabaddi'. More specifically, no research-based information is available till-to-date on physical fitness of male Kabaddi players, specially, for the group 18 to 23 years. It was, therefore, thought desirable to undertake this study, "FFECTS OF WEIGHT TRAINING PROGRAMME ON SELECTED PHYSICAL FITNESS VARIABLES, RAIDING AND BLOCKING SKILLS OF MALE KABADDI PLAYERS OF SWAMI RAMANAND TIRTH MARATHWADA UNIVERSITY, NANDED"

The specific objective of the study was considered to determine whether weight training programme can improve muscular endurance, speed and agility, Bicep, Belly, and strength, raiding, blocking, of male Kabaddi players.

On the basis of his long standing experience in Kabaddi, the researcher formulated the hypothesis. The null hypothesis sought to be tested was "There will be no significant effect of selected weight training programme on the physical fitness and raiding and blocking variables of the males Kabaddi players"

While conducting this experiment, the researcher noted the following limitations.

a) No special motivational technique was applied to influence the performance of various tests.

b) As the subjects belonging to various communities the related factors such as diet, daily routine of life style etc. were different which could not be controlled.

The study was undertaken with the following significance:

The study may highlight the applicability of the weight training programme in sports with special reference to Kabaddi.

The findings of the study will help the Kabaddi coaches, teachers of physical education of India to understand the role of weight training on physical fitness and shall remove the misconceptions about it.

The investigator conducted experiment on two parallel groups. One group received a pre-determined weight training programme whereas the other group did not receive the said stimulus. Thus, parallel group design was considered for this experiment.

A sample of 200 male Kabaddi players was randomly drawn from the dependent variables measured were follows:

- Speed ability was evaluated by 50 Meter run sprint event and the performance score was measured in seconds.
- Endurance ability was determined by 12 Minuet run and walk event and the related performance was recorded in Minutes/sacs.
- Agility of the subjects was measured by Shuttle run test and the performance was recorded in Seconds.

All the instruments were reliable and valid and the related facilities were readily available with the present researcher.

All the subjects (200) representing the sample was tested as follows:

5.1.1 Pretest

All the subjects participated in the pre-test which consists of the following events:

1) 50 Meter run sprint ;
2) 12 Minutes Run and walk
3) Shuttle Run
4) Standing broad jump

4) Sit ups

5) Raiding

6) Blocking

8) Medicine ball

9) Chin ups

Before participation, all were given proper instruction as to how to participate in each event. The individual scores of each event were recorded and preserved carefully.

5.1.2 Training Programme Schedule

The subjects belonged to the experimental group were imparted selected weight exercises for a period of one year as follows:

1. The selected weight training exercises were half-squat, full squat, bench press and shoulder press. These exercises were imparted to all the subjects of the experimental group on and from in the evening everyday accept Sunday.
2. Monday, Wednesday and Friday were the training days for leg exercise i.e. full squat and half squat. While hand exercises like bench press and shoulder press were given on Tuesday, Thursday and Saturday.

The subjects of the control group did not participate in the above programme, however, they were kept busy with some recreational activity during the experimental period.

5.1.3 Post Test

After completion of 1 year training period with weight training exercises, all the subjects of experimental and control groups were participated in the post-testing programme which was conducted like pre-test. The post-test data were also recorded and preserved carefully for statistical analysis.

The results, as obtained in this investigation, have been summarized below:

5.2 The results of the test conducted have been summarized as under:

The performance of 50Meter run sprint revealed that the experimental group could show significant superiority over the control group in 50 meter run sprint Test. (Table 1, 3 and 5). The result of within group comparison revealed that the control group could not record the

performance gain in speed ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in speed of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the general speed ability as assessed by the 50 meter run sprint Test.

The result on 12 Min Run and walk was not equally interesting. The subjects of the control group not to record higher performance in the within group comparison but in group comparison it is significant. However the subjects of experimental group could reveal higher performance in 12 Min. Run and walk in both the within group comparison and in between group comparison. Thus, experimental group could show significant superiority over the control group in 12 Min Run and walk test (3 and 5). The appearance of such result is quite logical, because the players in weight training programme to do circuit training continuously and run frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in Endurance as assessed by the 12 Min run and walk test.

The above result helps to test the formulated hypotheses. The result cited above indicate that weight training programme for a period of 1 year in this study could help to improve the speed, agility, and Endurance of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

The result of the shuttle run, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the control group in shuttle run Test. (Table 3 and 5). The exposure of weight training programme was to improve agility among the subjects of experimental group among the subjects of experimental group; however, such gain in performance was useful to improve agility among the subjects of experimental and control group.

This result helps to interpret that the experimental group showed significant than the control group. This in turn, helps to interpret that the weight training programme for 1 year period could improve agility as assessed by the "Shuttle Run Test"

5.2.1Discussion of Results on Shuttle Run Test

It was evident from the result on shuttle Run Test that although the experimental group and the control group showed significant improvement within group showed significant improvement with the group comparison, however, it also maintained its superiority over the control group in agility. (Table3and5). The exposure weight training programme was useful to improve agility among the subjects of experimental group; however such gain in performance was not very good than experimental groups results among the subject of control group. The appearance of such result might have happened because during weight training programme the runners are frequently using dodging tactics which need a good level of agility. Moreover, the chase in Kho – kho also acts according to the runner's movement. Therefore, both these players improved their ability in agility. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that the weight training programme for 1 year period could improve agility as assessed by the shuttle Run Test.

5.2.2 Discussion of Result on50 Meter run sprint Test

It was evident from the result on 50Meter run sprint Test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in speed. (Table1, 3and5). The exposure weight training programme was useful to improve speed among the subjects of experimental group; however such gain in performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the players need a good level of speed. Therefore, experimental group improved their speed ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which

in turn helps to interpret that weight training programme for 1 year period could improve speed as assessed by the 50 Meter run sprint Test.

5.2.3 Discussion of Result on 12 Min Run Walk

It was evident from the result on 12 Min Run and walk test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Endurance (Table 3 and 5). The exposure of weight training programme was useful to improve Endurance. Among the subject of experimental group, however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the players need a good level of Endurance he can raid much more time. Therefore, experimental group players improved their ability of Endurance. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Endurance as assessed by the 12 Min Run and walk.

5.3The results of the test conducted have been summarized as under:

The performance of standing broad jump revealed that the experimental group could show significant superiority over the control group in standing broad jump Test. (Table 1, 3 and 5). The result of within group comparison revealed that the control group could not record the performance gain in leg strength ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in leg strength of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the general Leg strength ability as assessed by the standing broad jump Test.

The result on sit ups was not equally interesting. The subjects of the control group not to record higher performance in the within group comparison but in group comparison it is significant. However the subjects of experimental group could reveal higher performance in sit

ups in both the within group comparison and in between group comparison. Thus, experimental group could show significant superiority over the control group in sit ups test (3 and 5). The appearance of such result is quite logical, because the players in weight training programme to do circuit training continuously and sit ups frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in stomach strength as assessed by the sit ups test.

The performance of Raiding revealed that the experimental group could show significant superiority over the control group in Raiding Test. (Table 1, 3 and 5). The result of within group comparison revealed that the control group could not record the performance gain in Raiding ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in Raiding of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the Raiding ability as assessed by the Raiding Test.

The above result helps to test the formulated hypotheses. The result cited above indicate that weight training programme for a period of 1 year in this study could help to improve the leg strength, Abdomen strength, and Raiding of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

The result of the, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the control group in standing broad jump Test. (Table 3 and 5). The exposure of weight training programme was to improve leg strength, among the subjects of experimental group among the subjects of experimental group; however, such gain in performance was useful to improve leg strength among the subjects of experimental and control group Test.

This result helps to interpret that the experimental group showed significant than the control group. This in turn, helps to interpret that the weight training programme for 1 year period could improve Raiding as assessed by the " Raiding this result helps to interpret that the experimental group showed significant than the control group. This in turn, helps to interpret that the weight training programme for 1 year period could improve Raiding as assessed by the "Raiding Test"

5.3.1 Discussion of Result on Standing Broad Jump Test

It was evident from the result on Standing Broad Jump Test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Leg strength (Table 1, 3 and 5). The exposure weight training programme was useful to improve stomach strength among the subjects of experimental group; however such gain in performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the players need a good level of Leg strength. Therefore, experimental group improved their Leg strength ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Leg strength as assessed by the Standing Broad Jump Test.

5.3.2 Discussion of Result on Sit ups Test

It was evident from the result on Sit ups Test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in stomach strength (Table 1, 3 and 5). The exposure weight training programme was useful to improve stomach strength among the subjects of experimental group; however such gain in performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the players need a good level of stomach strength. Therefore, experimental group improved their stomach strength ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over

the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Abdomen strength as assessed by the Sit ups Test.

5.3.3 Discussion of Result on Raiding

It was evident from the result on raiding test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in raiding skill (Table 3 and 5). The exposure of weight training programme was useful to improve Raiding among the subject of experimental group; however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the Kabaddi player needs a good level of raid he can raid much more time. Therefore, experimental group players improved their ability of raiding. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve raiding as assessed by the Raiding.

5.4. The results of the test conducted have been summarized as under:

The performance of Blocking revealed that the experimental group could show significant superiority over the control group in Blocking Test. (Table 1, 3 and 5). The result of within group comparison revealed that the control group could not record the performance gain in block ability, where as such gain was significant statistically among the subjects of the experimental group. The comparison between the experimental group and control group revealed that the gain in performance in block of subjects of the experimental group was significantly higher than that of the subjects of the control group. This result helps to interpret that the weight training programme for a period of 1 year could improve the general block ability as assessed by the blocking Test.

The result on medicine ball was not equally interesting. The subjects of the control group not to record higher performance in the within group comparison but in group comparison it is significant. However the subjects of experimental group could reveal higher performance in medicine ball in both the within group comparison and in between group comparison. Thus,

experimental group could show significant superiority over the control group in medicine ball test (3 and 5). The appearance of such result is quite logical, because the players in weight training programme to do circuit training continuously and frequently for a long period of time. This result helps to interpret that regular weight training for the period of 1 year was effective to improve ability in Aram strength as assessed by medicine ball test.

The above result helps to test the formulated hypotheses. The result cited above indicate that weight training programme for a period of 1 year in this study could help to improve the blocking, arm, and bicep strength of the subjects of 18 to 23 years of age. The results, in fact, revealed that three variables, selected in this study, were improved. Thus hypothesis-H formulated in this study was highly sustained.

The result of the Chin ups, the experimental group showed significant improvement. Within the group comparison, however, it also maintained its superiority over the control group in Chin ups Test. (Table 3 and 5). The exposure of weight training programme was to improve Bicep strength among the subjects of experimental group among the subjects of experimental group; however, such gain in performance was useful to improve bicep strength among the subjects of experimental and control group.

This result helps to interpret that the experimental group showed significant than the control group. This in turn, helps to interpret that the weight training programme for 1 year period could improve bicep strength as assessed by the "Chin ups Test"

5.4.1 Discussion of Results on blocking Test

It was evident from the result on blocking Test that although the experimental group and the control group showed significant improvement within group showed significant improvement with the group comparison, however, it also maintained its superiority over the control group in blocking (Table 3 and 5). The exposure weight training programme was useful to improve blocking among the subjects of experimental group, however such gain in performance was not very good than experimental groups results among the subject of control group. The appearance of such result might have happened because during weight training programme the runners are frequently using dodging tactics which need a good level of block. Moreover, the chase in Kabaddi also acts according to the players' movement. blocking

Therefore, both these players improved their ability in blocking. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that the weight training programme for 1 year period could improve blocking as assessed by the blocking Test.

5.4.2 Discussion of Result on Medicine ball Test

It was evident from the result on Medicine ball Test that although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in Aram strength . (Table 1,3 and 5). The exposure weight training programme was useful to improve Aram strength on the subjects of experimental group; however such gain in performance was not very good than experimental groups result of control group. The appearance of such result might have happened because during weight training programme, the players need a good level of Aram strength. Therefore, experimental group improved their Aram strength ability than control group. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve Aram strength as assessed by the Medicine ball Test.

5.4.3 Discussion of Result on Chin ups

It was evident from the result on chin ups test. That although the control group not to showed significant improvement within group comparison, however, experimental group is maintained its superiority over the control group in bicep strength (Table 3 and 5). The exposure of weight training programme was useful to improve bicep strength among the subject of experimental group; however such gain in performance was not done by control group. But the experimental group performance was shows very good result.

The appearance of such result might have happened because during weight training programme, the players need a good level of bicep he can chin ups much more time. Therefore, experimental group players improved their ability of bicep strength. This result helps to interpret that the experimental group showed highly significant superiority over the control group, which in turn helps to interpret that weight training programme for 1 year period could improve bicep strength as assessed by the chin ups.

5.5Conclusions

The investigator within the limitation of the study, made the following conclusions:

- Selected weight training programme for 1 year period has improved speed, endurance and agility of the subjects of 18 to 23 years of age.
- Selected weight training programme for 1 year period improve the agility speed and endurance of Men Women Kabaddi players.

5.6 Recommendation

The following recommendations are forwarded in the right of present study:

- It is recommended that the weight training should be improving speed, agility and endurance.
- This study of the effect of weight training may be improving their peak performance.
- Extension of such study in other areas of sports is recommended.
- The study conducted only on the girls subject–similar study can also be taken up for men and women, girls also.
- A similar study with longer and short turn training duration can be carried out.

BIBLIOGRAPHY

Arnold, F.G. (1968). "An experimental investigation of the effects of weight training progamme on underdeveloped junior high schools", Completed Research, 10-89.

Barrow, H.M. (1977). "Man and movement". Philadelphia: Lea and Febiger, pp.151-153.

Barrow, H.M. and Mcgee, R.M. (1971). "A practial approach to measurement in physical education". London: Second Edition, Published by Penry Kimpton Publishers, p.195.

Boyko, G. Rabert. (1984). "Comparison of weight training and calisthenics exercise programmes in developing strength and muscular endurance in united states army recruits", M.S. In Physical Education, p.81.

Bready, C. Frank, Jr. (1962). "A study of the effects of heavy resistance up on the battery of muscular development as indicated by strength, endurance and girth of the right elbow players", Completed Research, 4, 47.

Chair,W.J. (1960). "Investigation of Tests of Agility", Research Quarterly, 2:44, 1960.

Clarke, H.H. (1950). "Application of measrement to health and physical education". Englewood Cliffs: N.J. Prentice Hall, Inc.,p.110.

Clarke, H.H. (1979). "Definition of physical fitness:, Journal of Physical Education and Recreation, 50,8,28.

Garry, D., and Yanker. (1983). The complete book of exercise walking". Chiago: Contemporary Book, p.82.

Genzmer, D.E. (1961). "The effect of 3 systematic weight training method of jumping ability of high school basket ball players", Completed Research, 3, 86.

Greenlee, G.E. (1960). "The relationship of selected measures of strength performance", Completed Research in Healthy, Physical Education and Recreation, 2,43.

Hansen, L.C. (1970). "The effects of three selected weight training progammes on muscular strength, endurance, girth and cardiovascular endurance", Completed Research, 12, 1005.

Heightan, J.R. (1961). "Programme weight training", (New York: The Renold Press Company, pp.3-4.

Hegihton, J.K. (1961). "Programme weight training" New York: The Renold Press Company, pp.3-4.

Hockey. R.U. "Physcial fitnes the path wayto healtyful living". St. Luis: The C.V. Mosby Company, pp. 93-94.

Hooks, G. (1962). "Application of weight training to atthletics". Englewood Cliffs: N.J. Prentice Hall Inc., P.38.

Jackson, D.L. (1965). "The relationship of grip strength and lateral wrist strength to skill in golf", Completed Research in Health, Physical Education and Recreation, 9,47.

Kirkley, G. and Goodbody, J. (1978). "The manual of weight training Hutchinson Publishing Group, 116.

Lee, Kang Pyung. (1978). "The comparison of the muscular strength and power development through training programs with the external moment force system and the free weight training method using the slow and fast speeds of training", Doctoral Dissertation in Physical Education, p.224.

Makenzie, T.E. (1924). "Exercise in education and medicine". Philadephia: W.B. Saunders Company, p.27.

Mahews, D.K. (1973). "Measurement in physical education". Philadelphia: W.B. Saunders Company, p.5.

Mohr, Doroty, and Haverstic, M.J. "Relationship between height, jumping and agility to volley ball skill", R.C. American Assocaition for Health Physical Education and Recreation, 27,1, 76-78.

Morehouse, L.E., and Gross. (1976) "Total fitness in 30 minures a week", Great Britain: Hat Devis; Macgibben Ltd., p.27.

Morehouse, L.E. and Miller, A.T. (1976). "Physiiology of exercise". St. Louis: The C.V. Mosby Company, p.146.

Olsen, C.E. "The effects of a set circuit weight training programme on strength and muscular endurance of College are men", Completed Research, 23, 224.

Otte, A.R. (1990). (1990). "Errects of isotonic and plyometric training on upper body power of ninth and tenth grade males". Southeast Missouristate: M.A. In Secondary Education, pp.80.

Paish, Wilf. (1976). "Track and field atheletics". London: Lepus Book, Henry Kimpton Ltd., pp.49-51.

Payne, H. (1993). "Weight training for all sports", (London WCIB: Published in Great Britain by Pelham Book Ltd., p.22.

Payne, H. (1983). "Weight training for all sports", (London: Published By Pelham Books Ltd., p.44.

Prasad, R., Shinde,R. and Bhendigiri, R. (1966). Adhunik and Shastriya Coaching in Kabaddi, p.1

Price, S. (1975). "The effects of weight training on strength, endurance, girth and body composition in College Women", Completed Research in Health, Physical and Recreation, 17,48.

Rao, C.V. (1971). "Kabaddi". Patiala: N.I.S. Publication, p.8.

Rao,E.P. (1994). "Modern Coaching in Kabaddi", New Delhi: D.V.S. Publications.

Razzok, M.E. (1980). "A comparison of a st and walkard weigh training programe and a dynamic weigh lifting programme of muscular development of male college students", Completed Research, 22,86.

Ruth, W.M. (1963). "A relationship between general motor ability and objective measures of achievement in swimming at the intermediate level college woman", Completed Research in Health Physical Education and Recreation, 5, 102.

Sh and walkell, D.S. (1975). "The relationship of selected motor performance and anthropometic measurement trial to successful volley ball performance", Dissertation Abstract International, 35, 6496-a.

Singh ,J. (1962). "Endurance in athletics", Athletic Bulletin, 6,2,9.

Steenl and walk, E.L. (1967). "The relative effects of weight training and weight lifting on the development of strength and endurance in University of Washington", Completed Research, 9, 134.

Stephan, Thomas. (1964). "A comparison of the relationship between running speed and agility. "Completed Research in Health, Physical Education and Recreation, 6,30.

Thomas, J.P. (1965). "Scientific weight training for sports and games", Madras: Gnanoday a Press, p.21.

Strength Training

1) Bompa TO. 1999 Periodization Training for Sports. Champaign,IL: Human Kinetics.
2) Hoff J, Gran A, Helgerud J. Maximal strength training improves aerobic endurance

performance. Scand J Med Sci Sports. 2002 Oct;12(5):288-95
3) Johnston RE, TJ Quinn, Kertzer R and Vroman NB. Strength training in female distance runners: impact on running economy. J. Strength Cond. Res. 11: 224-229, 1997
5) Komi PV. Neuromuscular performance: factors influencing force and speed production. Scand J Sports Sci. 1979 1:2-15
6) developing explosive muscular power: implications for a mixed method training strategy. NSCA J. 1994 16:(5)20-31

Speed Training

1) Baechle TR and Earle RW. (2000) Essentials of Strength Training and Conditioning: 2nd Edition. Champaign, IL: Human Kinetics
2) Mero A, Komi PV, Gregor RJ. Biomechanics of sprint running. A review. Sports Med. 1992 Jun;13(6):376-92
3) Faccioni A. Assisted and resisted methods for speed development (part I). Modern Athlete Coach. 1994 32(2):3-6
4) Faccioni A. Assisted and resisted methods for speed development (part II). Modern Athlete Coach. 1994 32(3):8-11
1) Horswill CA. Applied physiology of amateur wrestling. *Sports Med.* 1992 Aug;14(2):114-43
2) Yoon J. Physiological profiles of elite senior wrestlers. *Sports Med.* 2002;32(4):225-33.
1) Ghosh AK, Goswami A, Ahuja A. Heart rate and blood lactate response in amateur competitive boxing. *Indian J Med Res.* 1995 Oct;102:179-83.
2) Guidetti L, Musulin A, Baldari C. Physiological factors in middleweight boxing performance. *J Sports Med Phys Fitness*. 2002 Sep;42(3):309-14.

Endurance Training

1) Bouchard C, Dionne FT, Simoneau JA, Boulay MR. Genetics of aerobic and anaerobic performances. *Exerc Sport Sci Rev.* 1992;20:27-58
2) Wilmore JH and Costill DL. (2005) *Physiology of Sport and Exercise: 3rd Edition.* Champaign, IL: Human Kinetics
3) Evertsen F, Medbo JI, Bonen A. Effect of training intensity on muscle lactate transporters and lactate threshold of cross-country skiers. *Acta Physiol Scand.* 2001 Oct;173(2):195-205

4) Ready AE, Quinney HA. Alterations in anaerobic threshold as the result of endurance training and detraining. *Med Sci Sports Exerc.* 1982;14(4):292-6

5) Conley DL, Krahenbuhl GS. Running economy and distance running performance of highly trained athletes. *Med Sci Sports Exerc.* 1980;12(5):357-60

6) McCole SD, Claney K, Conte JC, Anderson R, Hagberg JM. Energy expenditure during bicycling. *J Appl Physiol.* 1990 Feb;68(2):748-53

7)Ungerechts BE, Wilke K, Reischle K (eds). 1998 *Aerobic economy and competitive swim performances of U.S. elite swimmers. In: Swimming Science V*. Champaign, IL: Human Kinetics

8) Brooks GA, Mercier J. Balance of carbohydrate and lipid utilization during exercise: the "crossover" concept. *J Appl Physiol.* 1994 Jun;76(6):2253-61

9) Holloszy JO, Coyle EF. Adaptations of skeletal muscle to endurance exercise and their metabolic consequences. *J Appl Physiol.* 1984 Apr;56(4):831-8

10) Matoba H, Gollnick PD. Response of skeletal muscle to training. *Sports Med.* 1984 May-Jun;1(3):240-51

11) Burke ER, Cerny F, Costill D, Fink W. Characteristics of skeletal muscle in competitive cyclists. *Med Sci Sports*. 1977 Summer;9(2):109-12

12) Costill DL, Fink WJ, Pollock ML. Muscle fiber composition and enzyme activities of elite distance runners. *Med Sci Sports.* 1976 Summer;8(2):96-100

13) Gollnick PD. Metabolism of substrates: energy substrate metabolism during exercise and as modified by training. *Fed Proc.* 1985 Feb;44(2):353-7

14) Hoppeler H. Exercise-induced ultrastructural changes in skeletal muscle. *Int J Sports Med.* 1986 Aug;7(4):187-204

15) Dudley GA, Abraham WM, Terjung RL. Influence of exercise intensity and duration on biochemical adaptations in skeletal muscle. *J Appl Physiol.* 1982 Oct;53(4):844-50

16) Foster C, Hector LL, Welsh R, Schrager M, Green MA, Snyder AC. Effects of specific versus cross-training on running performance.Eur *J Appl Physiol Occup Physiol.* 1995;70(4):367-72

17) Klausen K, Andersen LB, Pelle I. Adaptive changes in work capacity, skeletal muscle capillarization and enzyme levels during training and detraining. *Acta Physiol Scand.* 1981 Sep;113(1):9-16

18) Burke EJ. Physiological effects of similar training programs in males and females. *Res Q.* 1977 Oct;48(3):510-7

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Strength and Power for Young Athletes, Human Kinetics, 2000.
Complete Conditioning for Golf, Human Kinetics, 1999.
Strength Training for Seniors, Human Kinetics, 1999.
Strength Training Past 50 (Ageless Athlete Series) Human Kinetics Publishers, 1997.
Building Strength and Stamina New Nautilus Training for Total Fitness, Human Kinetics Publishers, 1996.
Strength Fitness Physiological Principles and Training Techniques, Fourth Edition, Wm. C. Brown Publishers, 1995.
Nautilus Strength Training Certification Textbook, Nautilus 1995.
Be Strong: Strength Training For Muscular Fitness For Men And Women, Wm. C. Brown Publishers, 1992.
Personal Trainer Manual, American Council On Exercise, 1991. (Chapter On Muscular Strength And Endurance).
Strength Fitness: Physiological Principles and Training Techniques, Third Edition, Wm. C. Brown Publishers, 1990.
Keeping Fit, George W. Prescott Publishing Company, 1987.
Strength Fitness: Physiological Principles and Training Techniques, Second Edition, Wm. C. Brown Publishers, 1987.
Building Strength At The YMCA, Human Kinetics Publishers, 1987.
Strength Fitness: Physiological Principles and Training Techniques, First Edition, Allyn and Bacon Publishers, 1982.

1. Bodybuilding at a Glance. In: Sports Nutrition: A Practice Manual for Professionals. 4th ed. Sports, Cardiovascular, and Wellness Nutritionists Dietetic Practice Group. Dunford M, ed. American Dietetic Association. 2006: 502.
2. Burke L. Strength and Power Sports. In: Practical Sports Nutrition. Human Kinetics, Australia, 2007: 265–287.

3. Tarnopolsky M. Protein and Amino Acid Needs for Training and Bulking Up. In: Burke L, Deakin V. Clinical Sports Nutrition. 3rd ed. McGraw-Hill, 2006: 73–111.
4. American College of Sports Medicine; American Dietetic Association; Dietitians of Canada. Joint Position Statement: Nutrition and Athletic Performance. American College of Sports Medicine, American Dietetic Association, and Dietitians of Canada. Med Sci Sports Exerc 2000; 32: 2,130–2,145.
5. American College of Sports Medicine, Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine Position Stand. Exercise and Fluid Replacement. Med Sci Sports Exerc 2007; 39: 377–390.
6. American Dietetic Association. Fueling Body Builders (handout). 2006.
7. Australian Institute of Sport. Increasing Muscle Mass. www.ausport.gov.au/ais/nutrition/factsheets/body_size_and_shape2/increasing_muscle_mass.
8. Norton LE, Layman DK. Leucine Regulates Translation Initiation of Protein Synthesis in Skeletal Muscle After Exercise. J Nutr 2006; 136: 533S–537S.