MENTORING MODEL AND ITS IMPACT ON ATHLETIC PERFORMANCE

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Mr. SUSANT PANDA

ASSISTANT PROFESSOR

Submitted by

MUNAZIM ASIF MALIK

Rgd No: 11301416

Department of Physical Education

Lovely Faculty of Business & Arts

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Certificate

This is to certify that Mr.Munazim Asif Malik has completed M.P.ED Dissertation titled "MENTORING MODEL AND ITS IMPACT ON ATHLECTIC PERFORMANCE" under my guidance and supervision. To the best of my knowledge, the present work is the result of his original investigation and study. No part of the dissertation has ever been submitted for any other degree or diploma at any University.

Date: ----------

Mr.

Dean Faculty of Education

Lovely Professional University

Phagwara (Punjab)

Mr. Susant Panda

Lecturer

Dept. of physical education

Lovely Professional University

ABSTRACT

The motto of this investigation was to determine the impact of mentoring models on the athletic performance of male sprinters. The subjects for this investigation (N=30) were university level athletes with at least two years of varsity experience. The experimental groups had received a twelve week mentoring training .All the subjects were measured primarily for selected physical measures and secondarily for selected physiological and psychological variables by administering specific tests.

For testing statistical significance, primarily the obtained data was treated with Analysis of Co-variance (ANCOVA) and further to access the significant improvement within training groups, Level of Significance Difference (LSD) was employed at 0.05 level of significance. Finally the physical variables like abdominal strength shows significant result as compare to other variables and groups. Further in the light of statistical outcome, one to one mentoring has showed better response toward fast performance adaptation in comparison to that of m-mentoring.

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INVESTIGATOR

Munazim Asif Malik

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CHAPTER 1

INTRODUCTION

Mentoring should be a learning method wherever useful, personal, and reciprocal relationships are designed whereas specializing in achievement; emotional support may be a key component. Among mentoring interactions, mentees improve and acquire through discussions with mentors. By comparison, tutoring or work is provision of educational and skilled help during an explicit space with a sole specialize in competency. Mentoring is a more and more common conception of learning, development and support which might occur each naturally and formally to permit a private to share their skill, material and assistances through a different person so as to learn the expert growth.

It is a robust own expansion and management tool. It an efficient manner of serving to individuals to growth in their professions and is turning into growing common as its prospective is complete. It's a partnership among two individuals (mentor and mentee) usually operating during an alike field or distribution similar experiences. It's a useful connection mainly built upon common faith and esteem.

A mentor could be a leader who will facilitate the mentee to seek out the proper way and who will facilitate them to grow results to profession problems. Mentors trust on having had similar experiences to achieve associate sympathy with the mentee associated an understanding of their problems. Mentoring provides the mentee with a chance to have confidence career choices and progress.

A mentor ought to facilitate the mentee to think herself & increase her self-confidence. A mentor ought to raise queries & task, whereas provided that steerage & praise. Mentoring permits the mentee to discover new thoughts in self-confidence. It's a chance to appear plenty of carefully at oneself, our issues, opportunities & what you would like in lifespan. Mentoring is concerning revolving in to plenty of self-conscious, taking accountability for your lifespan & supervisory your lifespan inside the approach you pick, instead of leaving it to synchronic.

So the method of mentoring could also be viewed below 3 models – the interne, ability and reflective models. Within the apprentice model, the mentee observes the mentor and learns. Within the ability model, the mentor provides the mentee organized recommendation regarding performance and progress. Within the reflective model, the mentor helps the mentee to develop a reflective practicing. This wisdom thing pledges to the thoughtful model within which mentor

is seen as a purposeful, sustaining and discerning strategy that has a hearty development skill for every the tutor and mentee. You may be acquainted with a coaching relationship system that grows through four stages – making prepared, arranging, permitting and coming to conclusion.

A mentoring relationship must be:

Informal wherever mentoring happens in a very spontaneous format or on the opposite hand, it's known as involving a relationship between a caring individual and juvenile, that is made throughout the course of standard life events, and within which the adult provides steering and support to the juvenile.

Informal mentoring typically:

a) Involves no minimum time demand.
b) Could or might not involve frequent or regular contact between the mentor and mentee.
c) Could or might not embody help by associate degree organized service or organization.
d) Involves steering and support to youth solely as a bi-product or secondary focus of the link.
e) Could or might not involve support and/or oversight for the mentee and therefore the mentee's family.
f) Exists within the type of Youth Programs, Athletics, Youth teams, spiritual Instruction, and college Volunteers.

Formal wherever mentoring connection is characterised by its deliberateness – the associates within the bond provoke or provide the mentoring, create objectives for the link and build arrangements regarding its nature. Formal mentoring is comparatively structured and programmatic. It involves a protracted relationship between a caring mentor and juvenile (mentee), the goal of that is to produce the mentee with future steerage and upkeep.

Formal mentoring typically:

a) Takes place for a minimum of three months.
b) Involves frequent and regular contact between mentor and mentee.
c) Is power-assisted by AN organized service or organization.
d) Focuses on providing life-guidance and support.
e) Includes support and/or oversight for the mentee and also the mentee\'s family.
f) Involves screening and coaching yet as in progress support and/or oversight of the mentor.

Key mentoring skills for the betterment of athletes to mentors are:

a. Pay attention effectively.

b. Building trust.

c. Determining objectives.

d. Structure limit.

e. Stimulating and Inspirational.

There are two main types of mentoring:

a) Developmental mentoring – this is often wherever the mentor helps the mentee improve new skills and skills. The mentor could be a leader and a resource for the mentee's development.

b) Sponsorship mentoring – this is often once the mentor is a lot of a career influencer than a guide. During this scenario, the mentor takes an in depth interest within the progress of the mentee (or, a lot of ordinarily, the protégé). The mentor "opens doors", influencing others to assist the mentee or mentee's improvement.

As proclaimed on top of, coaching could be a system inside which an accomplished individual causes someone else to build up his or her objectives and aptitudes through a progression of time-constrained, private, one-on-one thoughts and distinctive learning exercises. As a mentor, you may have the likelihood to impart your comprehension and arrangements, build up your own particular canny, add to an extra relationship, learn correspondingly, and develop your abilities as a mentor. Remember, mentoring is regarding transporting data, capability, and information to mentees, in order that they will observe use of this, and build their confidence consequently. As a mentor, you're there to encourage, cultivate, and supply support, as a result of you've got already "walked the path" of the mentee.

Mentoring is unbelievably wide and muddled, a learning and advancement system that is troublesome to diagram. It's been compared, through the years, with a few expressions like instructing occupation, course, prompting and educating. Yet, it gets to be clear, once breaking down these correlations extra, that tutoring doesn't speak to only one of those expressions however truly includes exploitation every one of them together with diverse learning and natural procedure strategies. The humanities and abilities specified higher than square measure practiced to differed degrees at totally distinctive focuses inside the coaching strategy to fulfil beyond any doubt goals. A large portion of us mistake tutoring for associated thoughts like

instructing occupation and heading, and there square measure vital varieties inside the sensible tips on an approach to "do" coaching legitimately. Mentoring is special in its place as a technique for helping individuals in learning and vocation advancement in that it doesn't reject different techniques, however exists nearby them, supplementing them and including worth.

Thus, Mentoring could be an effective self-improvement and authorisation device. It a decent approach of serving to contender to advance in their vocations and is transforming into expanding boundless as its potential is figured it out. It's an organization between 2 people (guide and mentee) unremarkably working in an exceedingly comparative field or having comparable encounters. It's a helpful relationship essentially based upon shared trust and admiration.

Sports performance

It's that manner during which athlete offers its best potential or showing sensible skills towards his/her sports or games. An individual's athletic performance is referred in terms of vas endurance, muscular strength, and exercise capability. Performance is influenced by a mix of biological, psychosomatic, and socio-cultural factors.

STATEMENT OF PROBLEM

The motto of the present study is to select an appropriate mentoring model and analyse its impact on athlete's performance.

The subordinate motto of the study is to find out a) the change in their performance score at various stages of mentoring.

Operational Definition of the Terms

Mentor

It means that associate "a wise and a sure guide." Or associate authoritative senior sponsor or supporter.

Mentor is outlined as somebody who guides another to larger success.

*****"A mentor is a couple of steps down the path you wish to travel and is close enough to say, 'I was where you are now…you can be where I am now.'" (Forbes, Oldham College, NMN Annual Conference, 2000)*****

*****"Good mentors will generally need a strong sense of situation and a high degree of adaptability between styles." (Clutterbuck, 2004)*****

Mentoring

It is most oftentimes delineated as gifted, educated a specialist relationship amid which a talented individual (the coach) aids another (the mentee) in creating particular aptitudes and data that may upgrade the less-encountered individual's expert and private development.

* "Mentoring is to support and encourage people to manage their own learning in order that they may maximise their potential, develop their skills, improve their performance and become the person they want to be." Eric Parsloe, the Oxford School of Coaching & Mentoring.*

Mentoring relationships can be informal or formally assigned, long-term or short-term in nature, and convened electronically or face-to-face (Kasprisin, Boyle Single, Single, & Muller, 2003; Packard, 2003b)

One to one mentoring

It is that mentoring in which there is only one mentor and one mentee. In which mentor helps the mentee to solve his/her problems.

M-mentoring

It is that mentoring in which a mentor uses technological gadgets to improve or solve the problem of the mentee.

Mentoring Models

1. One-on-one mentoring model.
2. Team mentoring.
3. Multiple mentors.
4. Peer mentoring.
5. Distance mentoring.
6. Online mentoring. (M-mentoring).

DELIMITATIONS

1. This study was delimited to thirty athletes between the ages of 18-22 years.
2. The study is delimited to twelve weeks of constant management underneath a mentor.

HYPOTHESES

Based on the literature found, it is hypothesized that:

Hypothesis1: There would be a significance difference in the performance of athlete's practising under a specialized mentor.

Hypothesis2: The impact of different types of mentoring models will be similar in nature.

SIGNIFICANCE

1. It will provide a platform to develop interpersonal relationship between the mentor and the mentee.
2. Offer the competitor the event of getting new data and aptitudes by tolerating the guide's connected information.
3. It will improve the procedure of gathering attachment among the competitors.
4. Increased the options and participation of athletes.

OBJECTIVE

The aims of the initial study are

1. To provide the simple information about mentoring and their programs for athletes.
2. Recognise the key undertakings and techniques for upgrading the mentoring connection.
3. To recognize the extraordinary difficulties and opportunities that may happen when mentoring is led.

Chapter 2

REVIEW OF LITERATURE

Studies related to mentoring model

Bova and Phillips (1984). They conducted surveys and interviews to determine what kinds of things mentee learned from their mentors and how they learned them. They determined that mentee learn risk-taking behaviors, communication skills, survival in the organization, skills in their profession, and respect for people, ways to set high standards and not compromise them, how to be good listeners, how to get along with all kinds of people, leadership qualities and what it means to be a professional. Like Levinson et al, they suggest that mentoring is critically important in developing individuals. Their interviews took into account the variety of mentor/mentee dyads (male mentor/male mentee, male mentor/female mentee, female mentor/female mentee and female mentor/male protégé). One caution—this study is based on the classical definition of mentoring which fails to take into account the transformation of both individuals mentee and mentors.

Krupp's (1985). The research showed that, by encouraging mentoring relationships, aging staff can be rejuvenated. Krupp administered questionnaires to all the teachers within two schools (one elementary and one junior high). She found that 72 percent of the elementary teachers and 93 percent of the secondary teachers reported having a mentor. Furthermore, 56 percent of the elementary teachers and 45 percent of the secondary teachers reported being a mentor at some time in their career. Further, she discovered that, "they [mentors] gained self-awareness, personal growth, and a sense of worth and friendship—all factors necessary to an increased sense of self and the feeling that school and job are self-satisfiers." Krupp suggests that the positive self-esteem resulting from the mentoring experiences improved the schools' climates.

Freiberg et al (1997). Studied a mentoring program in a large urban school district to determine the effects of formal mentoring. The researchers conducted in-depth interviews with five mentors. They concluded that mentoring new teachers could provide as much professional development for the mentor as for the protégé. Mentors reported increased professionalism and greater empowerment to take on more responsibilities. The three activities that improved their sense of professionalism were: (1) making their own mentoring schedules, (2) expanding their own views of teaching and (3) enhancing their own professional growth. The mentors were transformed through team building, observing teachers at different schools, attending

conferences and consulting with peers. Twelve of eighteen mentor teachers, having experienced freedoms outside of the classroom, did not want to return to the confines of a schedule controlled by bells and a controlled environment. Several of these people found alternative jobs at postsecondary institutions. The authors did not describe their interview instrument or how the five mentors for their study were chosen.

Weaver et al (1999). Presents a mentoring model for management in sport and physical education that combines the various factors impinging on mentoring and the associated outcomes in a comprehensive framework. After outlining the benefits for mentee, mentors, and organizations, the paper explains issues related to mentoring functions, mentoring phases, mentee-mentor compatibility, and intervening variables.

Jones et al (2009). Background: Despite criticism of its positive claims being mostly baseless and ill-clarified, the construct of mentoring has acquire common use inside sports coaching job. Purpose: In a shot to deal with these issues, the aim of this paper is to require higher account of the researched proof on mentoring normally before providing some tips of excellent follow that would realistically be applied to sports coaching job. Literature review: In terms of the paper's content, a discussion surrounding definitions and conceptualizations is initially embarked upon. This is followed by a review of mentoring literature from other academic and professional fields, namely nursing, education and business, where the practice has been more widely researched, established and used. Current "models" of mentoring in sports coaching are then examined. Summary and conclusions: A final section, drawing from all the literature reviewed, offers tentative suggestions as to the possible future shape of effective mentoring in sports coaching.

Hicks, Deborah (2011). Mentorship is often considered one of the best ways to develop leadership potential in new library and information professionals. Mentors act as teacher, role model, and cheerleader, but there are potentially serious aspects to mentorships that will negatively impact the mentee. Such negatives include mentors sabotaging or taking credit for a mentee's work; personality clashes; abusive relationship behaviors such as sexual harassment, verbal abuse, controlling behavior, and jealousy; or the mentor using the mentee a lackey. And, what effect does a dysfunctional mentoring relationship have on a mentee? How can these serious negative behaviors be avoided? This discussion paper looks at the risks of mentoring as a way to develop leaders in LIS and provides suggestions for improving mentoring relationships so that it can be an even more effective tool for developing leadership in LIS. It

is time to look at mentorships in a more critical and reflective light for the benefit of mentors, mentee, and the profession at large.

Manju P. George et al (2012). The essence of management education lies in preparing and enabling the students to evolve cognitively, affectively and behaviorally into capable ones equipped to meet and manage challenges from within and outside their organizations or workplaces. Mentoring, as pedagogy, results in enhancing effectiveness of B-schools (Institutions offering MBA program) in ensuring the transformation of students into professionals. The purpose of this paper is to analyze and evaluate the formal and teacher-initiated student mentoring in B-schools in Kerala in terms of the designated activities, to establish effectiveness of mentoring as outcomes of faculty-related antecedents and mentoring activities, and to demonstrate the effectiveness in terms of the psycho-social changes of students.

Griffiths et al (2012). The aim of our study was to examine formalized mentoring as a learning strategy for volunteer sports coaches and to consider implications for other volunteer groups in the community. Despite the increasingly popular use of mentoring as a learning and support strategy across professional domains, and the sheer scale of volunteer sports coach activity in many communities, there has been comparatively little research on structured mentoring programmes in such settings. Data are reported from a 12-month longitudinal study of 6 mentors and 18 volunteer coaches who were organized into formal mentor partnerships in one region of the United Kingdom. Findings from our study revealed that mentoring was the result of continuous interaction between coach and context, and that context must be understood in both spatial and temporal terms. The implications for mentoring in other community based volunteer groups are explored.

Lamb et al (2014). Purpose: This article reports on the development of an English university's undergraduate students' E-Mentoring program me, initiated in response to an earlier study that gave attention to pupil voice concerning being placed on their school's G&T register for Physical Education. Drawing upon the theoretical concepts of Bernstein, the processes that underlie the interactions between school pupil and university student were explored. Bernstein's model of the pedagogic device was adopted to better understand the processes underlying the construction, transmission and acquisition of practices and experiences between student mentor and pupil. Method: Adopting a qualitative case study approach, the study revolved around the E-Mentoring interactions between purposively selected secondary school

pupils (N = 16) aged 11-16 and second year physical education undergraduate student mentors (N = 12) over the age of 18. During a six-month period participants established a support framework through Computer Mediated Communications (CMC). Weekly correspondences focused on pupil experiences within sport and school. The pedagogic processes underlying relations were understood through the analysis of 189 email correspondences. Digital interactions were supported by two visit days at the university, organized by the student mentors. These experiences and interactions were captured through pupil and student focus group interviews and questionnaires. Findings: The E-Mentoring program me provided space from which pupils began to discuss their experiences of being G&T. Based on established Junior Athlete Education (JAE) frameworks, guidelines (distributive rules) were framed to allow student mentors to be responsible for the transmission of knowledge and practices. In transmitting their own experiences of sport and school, student mentors were able to support pupils in areas such as injury and the management of academic practice. Conclusions: The study highlights how the provision of specific support facilitated the transmission of knowledge of being Gifted & Talented in physical education. Furthermore, the integration of CMC within the mentoring program me enabled student mentors to draw upon embodied dispositions, facilitating the acquisition of practices central to the experience of being G&T. Such support accentuated the voice of the pupil, making it a focal point to our evolvement of mentoring programs for G&T pupils in physical education. In drawing upon Bernstein's concepts, the study demonstrates the importance of understanding not only the production of discourses regarding being G&T, but also the processes in which they are transmitted, recontextualised and acquired. Some limitations in using forms of CMC as a medium, by which student mentors and pupils interact, are acknowledged.

CHAPTER 3
METHODOLOGY

In this chapter selection of subjects, selection of variables, collection of data, criterion measures, reliability of data, instrument reliability, tester competency and reliability, reliability of the test, experimental design, experimental procedure, procedure of administration of the test and statistical technique for the analysis of data has been described.

SELECTION OF THE SUBJECT

For the purposes of the study thirty male athletes(N=30), further divided into two experimental groups and one control group, were selected by using non-probability and judgemental sampling technique from Lovely Professional University, Punjab. The average age of the subjects were from 18 to 22 years and have participated maximum up to the level of All India Inter University Athletics Championship, organised by Association of Indian Universities in the events like 100mt, 200mt and 400mt.

Further to fulfil the purposes of the study the athletes were divided into two experimental groups and a control group in the following order:

E1: Ten Athletes participated in 100,200 and 400 metres sprints events.

E2: Ten Athletes participated in 100,200 and 400 metres sprints events.

C1: Control group.

SELECTION OF VARIABLES

I. Actual performance :
II. Physical variable:
    a. Abdominal strength.
    b. Hip flexibility.
    c. Acceleration speed.
    d. Agility.
    e. Balance.
III. Physiological variables:
    a. Cardio respiratory endurance.
    b. Vital capacity.
    c. Body fat percentage.

IV. Psychological variable:

a. Mental toughness.
b. Goal settings.

COLLECTION OF DATA

The data was collected by administrating the specific tests for measuring different related parameters with the prior approval of the executive authority and their sincere co-operation was solicited. Data was taken at their respective playing arenas when they were not busy in any kind of training or competitions and had enough time to spare for testing. Necessary instructions along with adequate motivation was passed on to the subject before the administration of each test. Confidentiality of response on each parameter was guaranteed.

CRITERION MEASURES

I. Actual performance.

Actual performance was measured by giving the athletes three chances of their respective events and the best performance was noted down as final data.

II. Physical variable.

a. Abdominal strength.

Abdominal strength was measured by administering 1 minute sit ups test, where the data was collected by measuring maximum number of sits ups in one minute.

b. HIP flexibility.

Hip flexibility was measured by administering sit and reach test, where the data was collected by measuring maximum reach by athlete on scale should be noted.

c. Acceleration speed.

Acceleration speed was measured by administering speed test, where the data was collected by measuring the maximum distance covered by the athlete in 5 seconds.

d. Agility.

Agility was measured by administering agility t-test, where the data was collected by measuring the fast movements in time taken by athlete.

e. Balance.

Balance was measured by administering stork balancing test, where the data was collected by how much time an athlete make balance on ball with one foot should be noted.

III. Physiological variables

a. Cardio respiratory endurance.

Cardio respiratory endurance by administering cardiorespiratory test, where the data was collected by noting its highest peak of oxygen used during working test.

b. Vital capacity.

Vital capacity was measured by administering PFT test, where the data was collected by Spirometer and check athlete maximum air volume.

c. Body fat percentage.

Body fat percentage was measured by administering body fat test, where data was collected by skin fold calliper in which we take different body segments.

IV. Psychological variable:

a. Mental toughness.

Mental toughness of athletes was measured by applying psychological performance inventory questionnaire. (James E.loehr)

b. Goal setting.

Goal setting ability of the athletes was measured by applying goal setting questionnaire (Mark spargo), general performance profile and psychological performance inventory.

RELIABILITY OF DATA

Establishing the instruments reliability, testing reliability, reliability of tests and subject's reliability, ensured data.

INSTRUMENT RELIABILITY

To establish the instrument reliability, all standardized equipment was used to carry the test.

TESTER COMPENTENCY

To ensure that the investigator was well versed in the techniques of conducting the test, the investigator had a number of practice session in the testing procedure under the guidance of the expert. Tester competency was also evaluated together by reliability of tests.

The test re test method was employed to establish the reliability of the test were repeated on two days with an interval of one day in between. The reliability coefficient of test-retest scores are presented in Table A.

Table-3.1

Correlation of Coefficient (Test retest) scores

S.no	Physical variables	Correlation of Coefficient
1	30seconds Sit ups test	.84
2	Agility t test	.87
3	Sit and reach flexibility test	.90
4	Sprint or Speed Tests	.85
5	Stork Balance Stand Test	.89

Table 3.2

S.no	Physiological variables	Correlation of Coefficient
1	Cardiorespiratory Fitness Testing	.91
2	PFT test	.84
3	Body fat test	.88

EXPERIMENTAL GROUP DESIGN

The two group Randomized selection and pre-post factorial design was used for this study. Three groups were made each comprising of ten subjects; these subjects participated voluntarily in the study.

EXPERIMENTAL PROCEDURE

The study was conducted for a period of12 weeks. The climate condition was cold and dry and atmospheric temperature was 6 to 18 degree Celsius.

ACTUAL PERFORMANCE

In this we do Testing and measurement for the means of collecting information upon which subsequent performance evaluations and decisions are made.

Physical variables

a) Abdominal strength:

This test requires the athlete to perform as many sit-ups as possible in 30 seconds.

The athlete warms up for 10 minutes .The athlete lies on the mat with the knees bent, feet flat on the floor and their hands on their ears where they must stay throughout the test. The assistant holds the athlete's feet on the ground. The assistant gives the command "GO" and starts the stopwatch. The athlete sits up touching the knees with their elbows, then returns back to the floor and continues to perform as many sit-ups as possible in 30 seconds. The assistant keeps the athlete informed of the time remaining. The assistant counts and records the number of correct sit-ups completed in the 30 seconds and uses this recorded value to assess the athlete's performance.

Administration of the test

Gender	Excellent	Above Average	Average	Below Average poor
Male	>30	26 - 30	20 - 25	17 - 19	<17
Female	>25	21 - 25	15 - 20	9 - 14	>9

b) Agility test:

Set out four cones as illustrated in the diagram above (5 yards = 4.57 m, 10 yards = 9.14 m). The subject starts at cone A. On the command of the timer, the subject sprints to cone B and touches the base of the cone with their right hand. They then turn left and shuffle sideways to cone C, and also touches its base, this time with their left hand. Then shuffling sideways to the right to cone D and touching the base with the right hand. They then shuffle back to cone B touching with the left hand, and run backwards to cone A. The stopwatch is stopped as they pass cone A.

Administration of the test

Scoring:

	Males (seconds)	Females (seconds)
Excellent	< 9.5	< 10.5
Good	9.5 to 10.5	10.5 to 11.5
Average	10.5 to 11.5	11.5 to 12.5
Poor	> 11.5	> 12.5

c) Hip flexibility:

This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level, not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position

for a one-two seconds while the distance is recorded. Make sure there are no jerky movements. See also video demonstrations of the Sit and Reach Test.

Administration of the test

Scoring:

The score is recorded to the nearest centimetre or half inch as the distance reached by the hand. Some test versions use the level of the feet as the zero mark, while others have the zero mark 9 inches before the feet. There is also the modified sit and reach test which adjusts the zero mark depending on the arm and leg length of the subject. There are some norms for the sit and reach test and also examples of some actual athlete results.

For males

Rating	Men	Women
Excellent	>17.9	>17.9
Good	17.0 - 17.9	16.7 - 17.9
Average	15.8 - 16.9	16.2 - 16.6
Fair	15.0 - 15.7	15.8 - 16.1
Poor	<15.0	<15.8

d) Acceleration speed:

The test involves running a single maximum sprint over a set distance, with time recorded. After a standardized warm up, the test is conducted over a certain distance, such as 10, 20, 40 and/or 50 meters or yards, depending on the sport and what you are trying to measure. The starting position should be standardized, starting from a stationary position with a foot behind the starting line, with no rocking movements. If you have the equipment (e.g. timing gates), you can measure the time to run each split distances (e.g. 5, 10, 20m) during the same run, and then acceleration and peak velocity can also be determined. It is usual to give the athletes an adequate warm-up and practice first, and some encouragement to continue running hard past the finish line.

Administration of the test

Scoring:

	Time	Yards
Excellent	4.50	>40
Good	4.80	>30
Average	5.30	>20
Poor	6.00	<10

e) Balance test:

Remove the shoes and place the hands on the hips, then position the non-supporting foot against the inside knee of the supporting leg. Stork Balance Exercise The subject is given one minute to practice the balance. The subject raises the heel to balance on the ball of the foot. The stopwatch is started as the heel is raised from the floor. The stopwatch is stopped if any of the follow occur.

Administration of the test

Scoring:

	(Seconds)
Excellent	< 50
Good	40 - 50
Average	25- 39
Fair	10 - 24
Poor	< 10

Physiological variables:

a) Cardio respiratory endurance:

Cardiorespiratory fitness is the ability to perform dynamic, moderate- to high-intensity exercise involving large-muscle groups for prolonged periods of time (American College of Sports Medicine [ACSM] 2000).

In this first we assess an athlete current fitness status (VO2max). Then tell him about your test in which individualized exercise program based on maximal endurance capacity. Exercise is performed on an appropriate ergometer (treadmill, cycle, swim bench etc.). The exercise workloads are selected to gradually progress in increments from moderate to maximal intensity. Oxygen uptake is calculated from measures of ventilation and the oxygen and carbon

dioxide in the expired air, and the maximal level is determined at or near test completion

Administration of the test

Maximal oxygen uptake norms for men (ml/kg/min)

	Age (years)					
Rating	18-25	26-35	36-45	46-55	56-65	65+
Excellent	> 60	> 56	> 51	> 45	> 41	> 37
Good	52-60	49-56	43-51	39-45	36-41	33-37
Above average	47-51	43-48	39-42	36-38	32-35	29-32
Average	42-46	40-42	35-38	32-35	30-31	26-28
Below average	37-41	35-39	31-34	29-31	26-29	22-25
Poor	30-36	30-34	26-30	25-28	22-25	20-21
Very poor	< 30	< 30	< 26	< 25	< 22	< 20

Maximal oxygen uptake norms for women (ml/kg/min)

	Age (years)					
Rating	18-25	26-35	36-45	46-55	56-65	65+
Excellent	> 56	> 52	> 45	> 40	> 37	> 32
Good	47-56	45-52	38-45	34-40	32-37	28-32
Above average	42-46	39-44	34-37	31-33	28-31	25-27
Average	38-41	35-38	31-33	28-30	25-27	22-24
Below average	33-37	31-34	27-30	25-27	22-24	19-21
Poor	28-32	26-30	22-26	20-24	18-21	17-18
Very poor	< 28	< 26	< 22	< 20	< 18	< 17

b) Vital capacity:
The tests determine how much air your lungs can hold, how quickly you can move air in and out of your lungs, and how well your lungs put oxygen into and remove carbon dioxide from your blood. Spirometry is the first and most commonly done lung function test. It measures how much and how quickly you can move air out of your lungs. For this test, you breathe into a mouthpiece attached to a recording device (spirometer). The information collected by the spirometer may be printed out on a chart called a Spiro gram.

Administration of the test

Vital capacity is the maximum amount of air that can be exhaled after a maximum inhalation.

It can be dependent on age, sex, height etc and it falls as it grows.

Male: vital capacity (ml) = (27.63−0.112×age) ×height (cm)

Female: vital capacity (ml) = (21.78−0.101×age) ×height (cm)

c) Body fat percentage:

Estimation of body fat by skinfold thickness measurement. Measurement can use from 3 to 9 different standard anatomical sites around the body. The right side is usually only measured (for consistency). The tester pinches the skin at the appropriate site to raise a double layer of skin and the underlying adipose tissue, but not the muscle. The callipers are then applied 1 cm below and at right angles to the pinch, and a reading in millimetres (mm) taken two seconds later. The mean of two measurements should be taken. If the two measurements differ greatly, a third should then be done, then the median value taken.

Administration of the test

Scoring:

	Excellent	good	average	below average	poor
Normal Male	60-80	81-90	91-110	111-150	150+
Female	70-90	91-100	101-120	121-150	150+
Athletic Male	40-60	61-80	81-100	101-130	130+
Female	50-70	71-85	86-110	111-130	130+

Psychological variables:

a) Mental toughness: Psychological Performance Inventory (PPI) by James E. Loehr (1982). It is a useful psychometric instrument to measure individual's mental toughness (Appendix-C).

Mental Toughness Test (Loehr, 1982) is personal awareness version, which focuses on, the score range for seven broad personalities and behavioural factors that are associated with success in competitive activity. The idea of mental toughness and the ability to develop mentally tough athletes is a socially popularized concept, Respondents were asked to indicate whether each reason was almost always, often, sometimes, seldom, and almost never. The subject responds to each statement using a five point ordinal scale. Hence the minimum point of response in each system stands at 1 and maximum pole at 5.

The questionnaire had undergone psychometric testing. A factor analyses was performed on participants throughout several studies, resulting in seven factor solutions, which are consistent amongst research.

Administration of the test

This questionnaire measures various aspects of mental toughness such as:

Factor 1	Self Confidence
Factor 2	Negative energy control
Factor 3	Attention Control
Factor 4	Visual / imagery control
Factor 5	Motivational Level
Factor 6	Positive energy Control
Factor 7	Attitude Control

The forty two item scale yields an overall mental toughness score as well as seven six-item subscale scores in (a) self-confidence, (b) negative energy control, (c) attention control, (d) visualisation and imagery control, (e) motivation, (f) positive energy and (g) attitude control. Subscale scores ranged from a low of 6 to a desirable high of 30 and total scores from 42 to 210. Scores were recorded on a five point Likert scale anchored by almost always and almost never.

The psychological performance inventory (PPI) is a useful psychometric instrument to measure individual's mental toughness on the basis of these norms given below:-

26-30	Excellent Skills
6-19	Room for improvement
6-19	needs special attention

b) Goal settings: (Mark Spargo, AIS 2000)

Even though the goal setting process is straight forward, there are however rules which must be followed for goal setting to be successful.

The goals were negotiated quarterly as for the training schedule and keeping in mind the competitive aspect. Rules followed for setting the goal are the following:

i. Agreed upon jointly by the coach and athlete concerned.
ii. Restricted to factors over which the athlete has personal control.
iii. Stated positively rather than in either negative or avoidance terms.
iv. Related to the segment of performance.
v. Aimed at improving performance, not simply maintaining it (Challenging).
vi. As difficult as possible but still attainable.
vii. Related directly to performance.
viii. Observable and readily assessable (Measurable)

Based on the rules of goal setting the goal was set by the coach and the athlete in the presence of the investigator at the beginning of the study. The target kept was to be achieved with in a period of three months. But finally for assessment for this it was every athlete's performance record, which were the criteria taken into consideration.

PROCEDURE OF MENTORING TRAINING

Table 3.3

Mentoring Training	Week 1	W eek 2	Week 3	Week 4	W eek 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
One to one	†3*20 Developing personal relationship	†3*20 Implementing of exercises	†3*20 Helping in modifying techniqu e	†2*30 Helping in developing concentration	†3*20 Focus on stability and form	†3*20 Develop opportunities	†2*20 Improving skills	†3*20 Helping in goal setting	†2*20 Helping to adjust in any environment	†3*20 Help in adjusting the structure	†2*20 Helping in strength there weaken areas	†3*20 Help in establishing a role model
M – mentoring	†3*20 Forming support	†3*20 forming be more openness to tell their problems	†3*20 Giving freedom to tell their views	†2*20 Showing online motivational clips	†3*20 Giving internet related tasks like read about your role models	†3*20 Telling the latest trends in sports	†2*20 Try to help in grasping new things for better effectiveness	†3*20 Encouraging to remain in the same field	†2*20 guide through motivational messages	†3*20 Help in Evaluating the things oneself by sharing their thoughts	†2*20 Showing their best performances before training	†3*20 Guiding their ongoing and incoming mails or messages

†session,*time (minutes)

STATISTICAL TECHNIQUE

In order to understand the rate of progression in all the dependent variables throughout the mentoring process, descriptive statics such as mean and standard deviation has been applied in the present study. Further to examine the effect of mentoring on actual performance ANCOVA and POST- HOC TEST will be applied. The level of significance will be fixed at 0.05.

CHAPTER 4

ANALYSIS OF DATA AND DISCUSSION OF FINDINGS

The statistical analysis of data collected on thirty subjects belonging to different groups has been presented in this chapter. The subjects were divided randomly into three equal groups consisting of ten subjects each, belonging to Experimental group-I (one to one mentoring), Experimental group-II (M-mentoring) and control group. The data on selected criterion measures for all the three groups were collected under similar conditions.

The data was examined by applying analysis of covariance. Analysis of covariance was applied with regards to three experimental groups and a control group and the pre-post randomized group design was employed in this study. The subjects for the experimental groups and the control group were divided at random. The difference between initial means of the groups at pre-test was taken into account during analysis of post-test differences between the means by the process of application of ANCOVA, where the final means were adjusted for difference in the initial means and adjusted means were tested for significance at 0.05 level.

FINDINGS

The results are presented in this chapter in tabular form and mentoring model wise discussion of findings was made.

The findings and discussion of findings with regard to the present study have been presented in two sections. Section one deals with the Descriptive Statistics of the three groups. Section two deals with the comparison of pre-test and post-test of experimental and control group.

Section one

The findings pertaining experimental groups and control group means and standard deviations were computed and data pertaining to that have been presented in table 4.1.

Variable	Non-Parametric	One on one		M-mentoring		Control group	
		Pre	Post	Pre	Post	Pre	Post
Abdominal strength	Mean	17.5	20.2	16	18.2	14.9	14.9
	Sd	3.04	3.31	3.19	3.42	2.28	2.80
Hip flexibility	Mean	14.89	14.92	12.82	12.90	11.86	11.964
	Sd	3.24	3.36	2.31	2.36	3.71	3.70

Agility	Mean	11.64	11.426	11.19	11.15	14.49	14.49
	Sd	1.27	1.32	0.88	0.86	0.87	0.87
Acceleration speed	Mean	5.83	5.82	5.72	5.68	5.64	5.63
	Sd	0.41	0.40	0.31	0.31	0.33	0.33
Balance	Mean	21.6	25.9	19.6	21.6	16.1	15.3
	Sd	3.69	3.50	3.71	3.80	3.21	2.90
Cardio respiratory endurance	Mean	48.7	51.3	41.6	43.6	60.8	60.6
	sd	4.26	4.22	6.55	5.92	15.56	15.85
Vital capacity	Mean	4.39	4.49	4.56	4.47	4.63	4.65
	Sd	0.60	0.64	0.58	0.67	0.53	0.57
Body fat percentage	Mean	66.4	64.5	54.7	53.2	53.9	54.5
	Sd	14.76	14.56	10.38	9.56	15.34	14.22
General performance profile	Mean	81.9	84.1	82.5	85.2	82.5	81.5
	Sd	2.54	2.66	2.27	2.44	3.74	3.59
Psychological performance inventory	Mean	144.3	146.5	145.5	148.5	147.7	147
	Sd	3.13	3.80	4.19	4.90	2.58	2.70
Actual performance	Mean	13.725	13.685	13.834	13.746	14.539	13.587
	Sd	1.23	1.25	0.72	0.69	0.59	3.52

Table- 4.1 clearly indicates the mean and standard deviations of abdominal strength pre-test one to one group17.5±3.04, m-mentoringgroup16±3.19, and Control group14.9±2.28. Post-test one to one20.2±3.31, m-mentoring group18.2±3.42, Control group14.9±2.80. Hip flexibility pre-test one to one group 14.89±3.24, m-mentoring group 12.82±2.31, Control group 11.86±3.71. Post-test one to one 14.92±3.36, m-mentoring group 12.905±2.36, Control group 11.96±3.70.Agility pre-test one to one group 11.64±1.27, m-mentoring group 11.193±0.88, Control group 14.49±0.87. Post-test one to one 11.42±1.32, m-mentoring group 11.15±0.86, Control group 14.49±0.87.Acceleration speed pre-test one to one group5.83±0.41, m-mentoring group5.72±0.31, Control group5.64±0.33. Post-test one to one5.82±0.40, m-mentoring group5.68±0.31, Control group5.63±0.33.Balance pre-test one to one group 21.6±3.69, and m-mentoring group 19.6±3.71, and Control group 16.1±3.21. Post-test one to one 25.9±3.50, m-mentoring group 21.6±3.80, Control group 15.3±2.90.Cardio-respiratory

endurance pre-test one to one group 48.7±4.26, m-mentoring group 41.6±6.55, and Control group60.8±15.56. Post-test one to one 51.3±4.22, m-mentoring group 43.6±5.92, Control group60.6±15.85.Vital capacity pre-test one to one group4.39±0.60, m-mentoring group4.56 ±0.58, Control group 4.63 ±0.53. Post-test one to one4.49±0.64, m-mentoring group4.47±0.67, Control group4.65±0.57.Body fat percentage pre-test one to one group66.4±14.76, m-mentoring group54.7±10.38, and Control group53.9±15.34. Post-test one to one 64.5±14.56, m-mentoring group53.2± +9.56, and Control group54.5±+14.22.General performance profile pre-test one to one group81.9±2.54, m-mentoring group 82.5±2.27, Control group 82.5±3.74. Post-test one to one 84.1±2.66, m-mentoring group 85.2±2.44, Control group 81.5±3.59.Psychological performance inventory pre-test one to one group144.3±3.13, m-mentoring group145.5±4.19, and Control group 147.7±2.58. Post-test one to one146.5±3.80, m-mentoring group148.5±4.90, Control group147±2.70.Actual performance pre-test one to one group13.72±1.23, m-mentoring group13.83±0.72, Control group14.53± +0.59. Post-test one to one13.68±1.25, m-mentoring group13.74±0.69, Control group13.58±3.52.

Section Two

To determine whether the experimental treatment was effective in bringing about a significant change in mentoring models of the experimental groups in contrast to the control group an parametric statistics i.e. Analysis of Co-variance (ANCOVA) test was employed and further to access significant improvement Level of Significant Difference (LSD) test has been employed. The level of significance was set at 0.05 in both the cases.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Physical Measures (Abdominal Strength, Hip Flexibility, Agility, Acceleration Speed and Balance) of Athletes were computed and data pertaining to that have been presented below in Table –4. 2 to Table-4.7.

Table –4.2

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Abdominal Strength) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Abdominal Strength	Between groups (influence factor)	2	34.06666667	143.2666667	68.03333333	36.03174326	18.01587163	**9.830***
	Within groups (other fluctuations)	26	231.4	286.1	234.9	47.64706137	1.832579283	
	Total	28	265.4666667	429.3666667	302.9333333	83.67880462		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

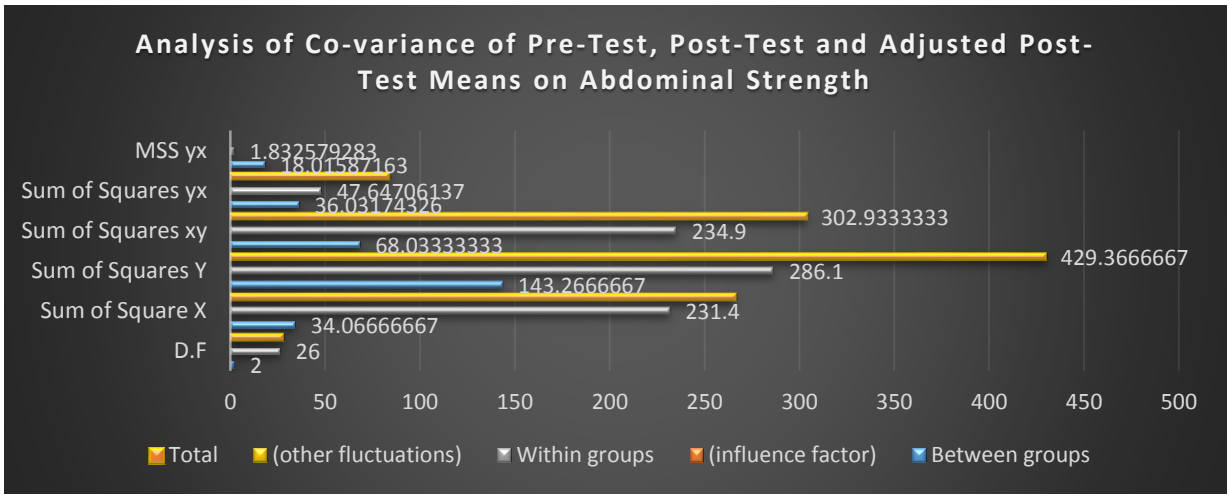

Figure-2

The analysis of co-variance for abdominal strength was significant in case of pre-test means from which it is clear that the post-test means is differ significantly and that the random assignment of subjects to the two experimental groups was quite successful. The post-test means yielded a f ratio of 9.830 which was also significant at 0.05 level of confidence. The F-ratio needed for significance 0.05 level of confidence was1.706.

The obtained F-value is significant at 0.05 level of confidence in case of Abdominal Strength (9.83). Therefore Level of Significant Difference was resorted to find out the significance of ordered adjusted final means (LSD), which is shown in Table – 4.3

Table – 4.3

Testing Significance of Difference among Adjusted Post Means of One on One Mentoring group, M-Mentoring Group and Control Group on Abdominal Strength.

VARIABLE	One to One Mentoring	M-Mentoring	Control Group	CD AT 5% LEVEL
Abdominal Strength	18.81	18.35		2.4%
		18.35	16.15	1.6%
	18.81		16.15	2.1%

*significant at 0.05 level

The obtained data from Table – 2.1 shows **One to One Mentoring** shows better impact on Abdominal Strength than that of **M-Mentoring** and Control Group.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) on Hip Flexibility of Athletes were computed and data pertaining to that have been presented below in Table – 4.4

Table – 4.4

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Hip Flexibility) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Hip Flexibility	Between groups (influence factor)	2	48.11332667	45.74480667	46.91409667	0.000332042	0.000166021	0.0001
	Within groups (other fluctuations)	26	278.03174	286.80513	270.37147	23.88287591	0.91857215	
	Total	28	326.1450667	332.5499367	317.2855667	23.88320795		

***Significant at 0.05 level of Confidence TAB. F.05 (2, 26) = 1.706**

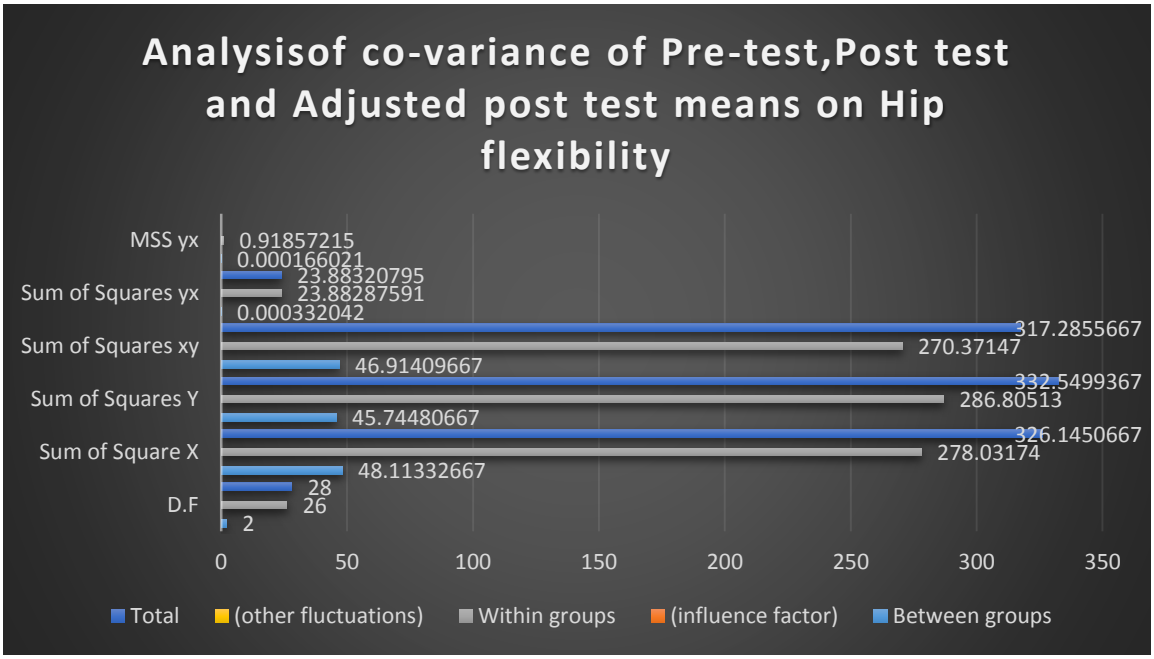

Figure-3

The analysis of co-variance for hip flexibility was insignificant in case of pre-test means from which it is clear that the post-test means is differ significantly and that the random assignment of subjects to the two experimental groups was quite successful. The post-test means yielded a f ratio of 0.0001 which was also significant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) on Agility of Athletes were computed and data pertaining to that have been presented below in Table – 4.5

Table – 4.5

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Agility) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Agility	Between groups (influence factor)	2	63.83142	68.97292667	66.25128	0.402043731	0.201021866	1.185
	Within groups (other fluctuations)	26	30.2009	31.16037	28.42318	4.410267807	0.169625685	
	Total	28	94.03232	100.1332967	94.67446	4.812311538		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) =1.706**

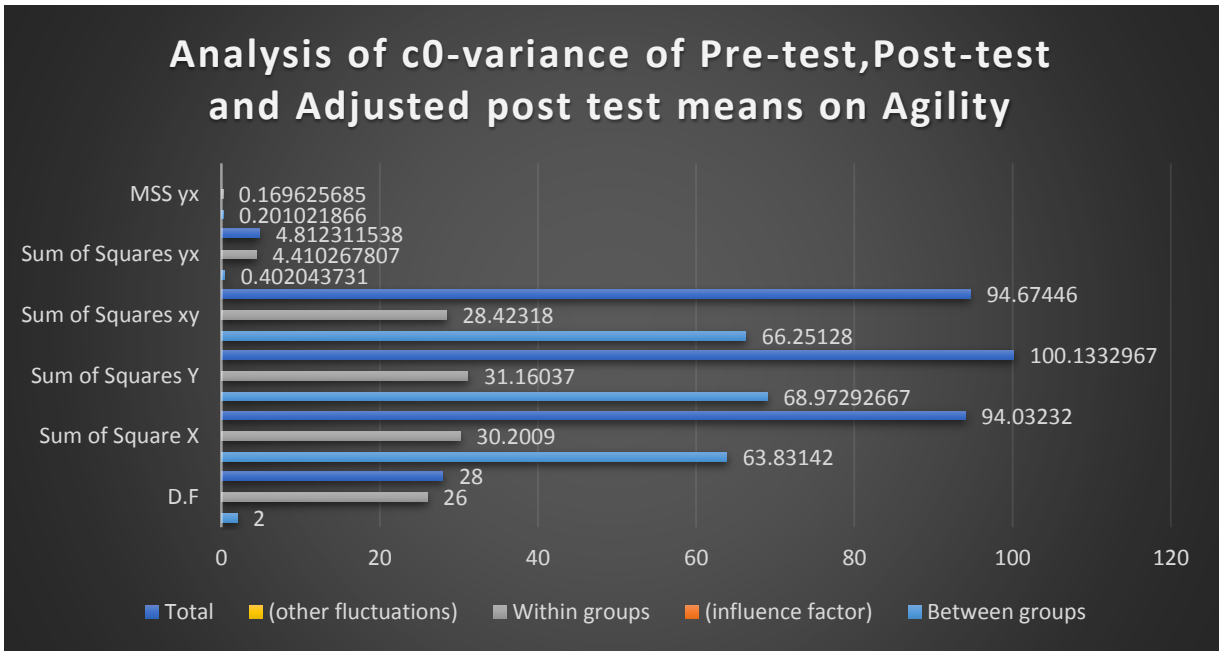

Figure 4

The analysis of co-variance for agility was insignificant in case of pre-test means from which it is clear that the post-test means is differ significantly and that the random assignment of subjects to the two experimental groups was quite successful. The post-test means yielded an f ratio of 1.185 which was also significant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was 1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) on Acceleration speed of Athletes were computed and data pertaining to that have been presented below in Table –4.6

Table 4.6

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Acceleration speed) of One on One Mentoring, M-Mentoring and Control Group

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Acceleration speed	Between groups (influence factor)	2	0.17666	0.175286667	0.1738	0.005444217	0.002722108	0.11
	Within groups (other fluctuations)	26	3.65162	3.53785	3.89336	-0.61325337	-0.023586668	
	Total	28	3.82828	3.713136667	4.06716	-0.607809154		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) =1.706**

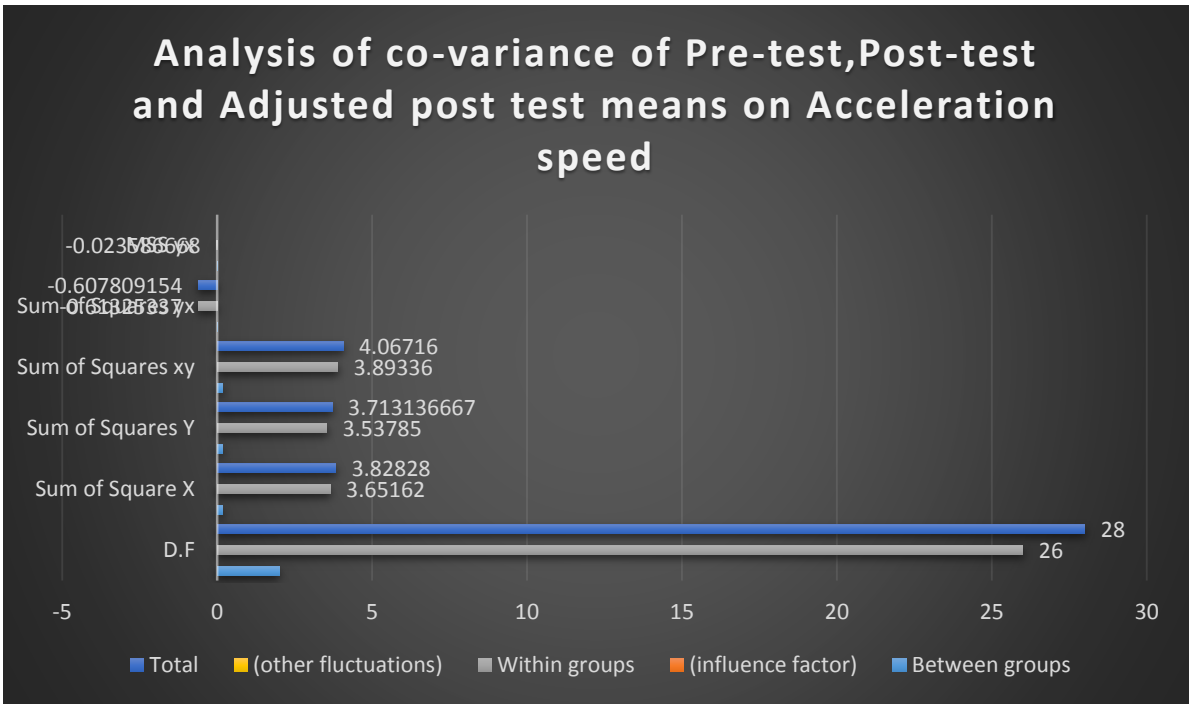

Figure 5

The analysis of co-variance for acceleration speed was in significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test means yielded an f ratio of -0.11 which was insignificant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) on Balance of Athletes were computed and data pertaining to that have been presented below in Table – 4.7

Table 4.7

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Balance) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Balance	Between groups (influence factor)	2	155	568.4666667	296.5	57.26065136	28.63032568	4.293
	Within groups (other fluctuations)	26	353.7	329.4	421.7	-173.3732259	-6.668200996	
	Total	28	508.7	897.8666667	718.2	-116.1125745		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

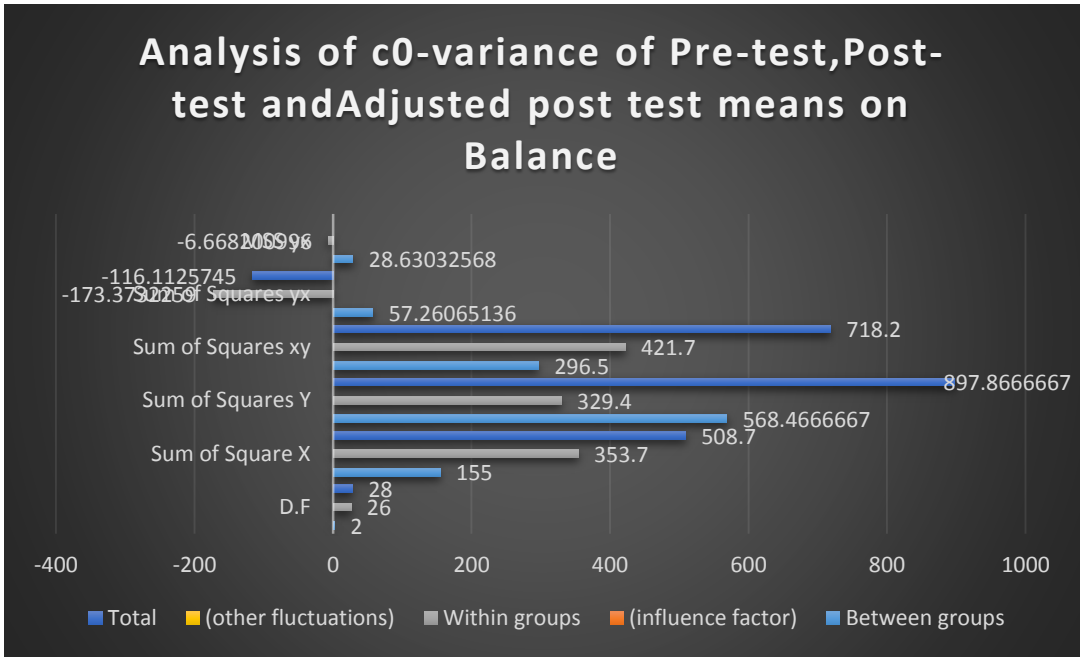

Figure 6

The analysis of co-variance for balance was not significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test means yielded

an f ratio of -4.293 which was insignificant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Physiological variables (cardio respiratory endurance, vital capacity, body fat percentage) of Athletes were computed and data pertaining to that have been presented below in Table – 4.8 to Table - 4.10.

Table 4.8

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (cardio respiratory endurance) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Cardio respiratory endurance	Between groups (influence factor)	2	1884.86	1449.26	1645.33	38.479	19.23	3.984
	Within groups (other fluctuations)	26	2750.1	2756.9	2815.5	-125.555	-4.82	
	Total	28	4634.9	4206.16	4460.83	-87.075		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

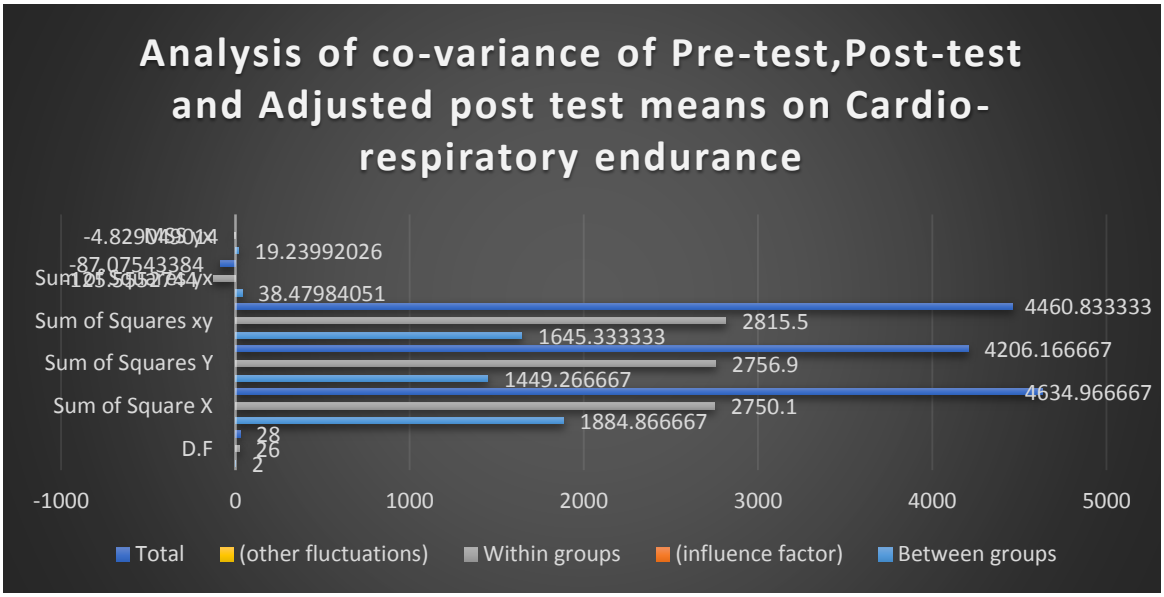

Figure 7

The analysis of co-variance for cardio respiratory endurance was not significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test means yielded an f ratio of -3.984which was insignificant at 0.05 level of confidence. The F-ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Physiological variables (vital capacity) of Athletes were computed and data pertaining to that have been presented below in Table – 4.9

Table 4.9

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Vital capacity) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Vital capacity	Between groups (influence factor)	2	0.199526667	0.001306667	-0.016	0.090637972	0.045318986	0.136
	Within groups (other fluctuations)	26	10.46121	12.39904	6.27112	8.639728596	0.332297254	
	Total	28	10.66073667	12.40034667	6.254973333	8.730366568		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

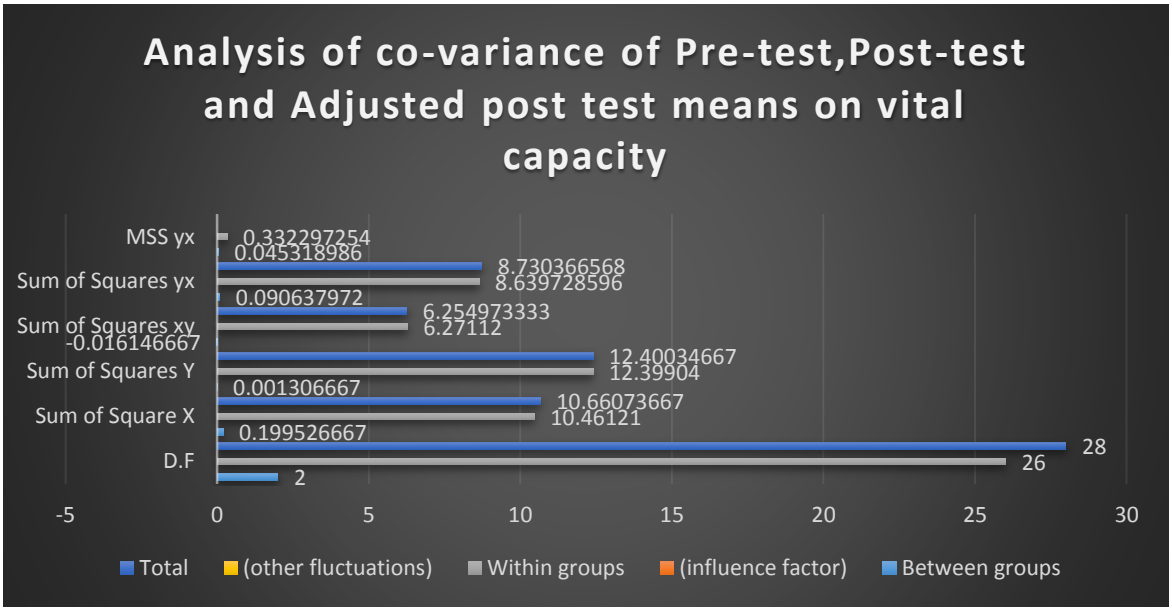

Figure 8

The analysis of co-variance for vital capacity was significant in case of pre-test means from which it is clear that the post-test means is differ significantly and that the random assignment of subjects to the two experimental groups was quite successful. The post-test means yielded an f ratio of 0.136 which was also significant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Physiological variables (body fat percentage) of Athletes were computed and data pertaining to that have been presented below in Table – 4.10

Table 4.10

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (Body fat percentage) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Body fat percentage	Between groups (influence factor)	2	979.2666667	764.6	853.9	21.60814066	10.80407033	0.815
	Within groups (other fluctuations)	26	5269.4	4764.6	4826.1	344.5064011	13.2502462	
	Total	28	6248.666667	5529.2	5680	366.1145418		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

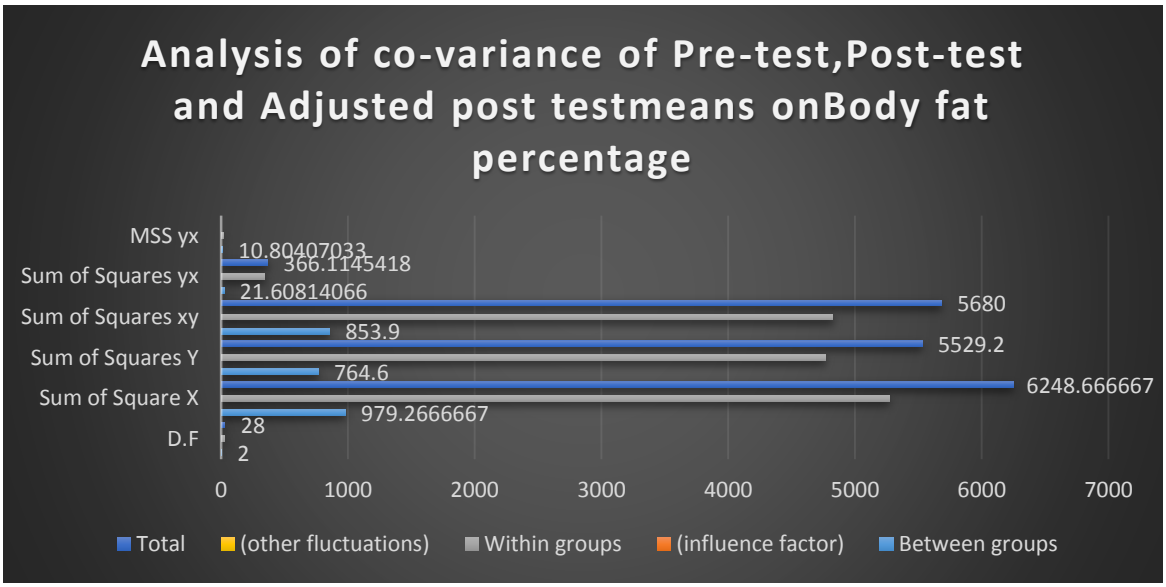

Figure 9

The analysis of co-variance for body fat percentage was in significant in case of pre-test means from which it is clear that the post-test means is differ significantly and that the random assignment of subjects to the two experimental groups was quite successful. The post-test means yielded an f ratio of 0.815 which was also significant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Psychological variables (general performance profile, psychological

performance inventory) of Athletes were computed and data pertaining to that have been presented below in Table – 4.11 to Table- 4.12

Table 4.11.

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected psychological variable(general performance profile) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
General performance profile	Between groups (influence factor)	2	28603.46667	25922.86667	27229.46667	28984.58	14492.29363	15.154
	Within groups (other fluctuations)	26	171.5	190.5	-2072.9	-24864.4	-956.3228661	
	Total	28	28774.96667	26113.36667	25156.56667	4120.192746		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 2.60**

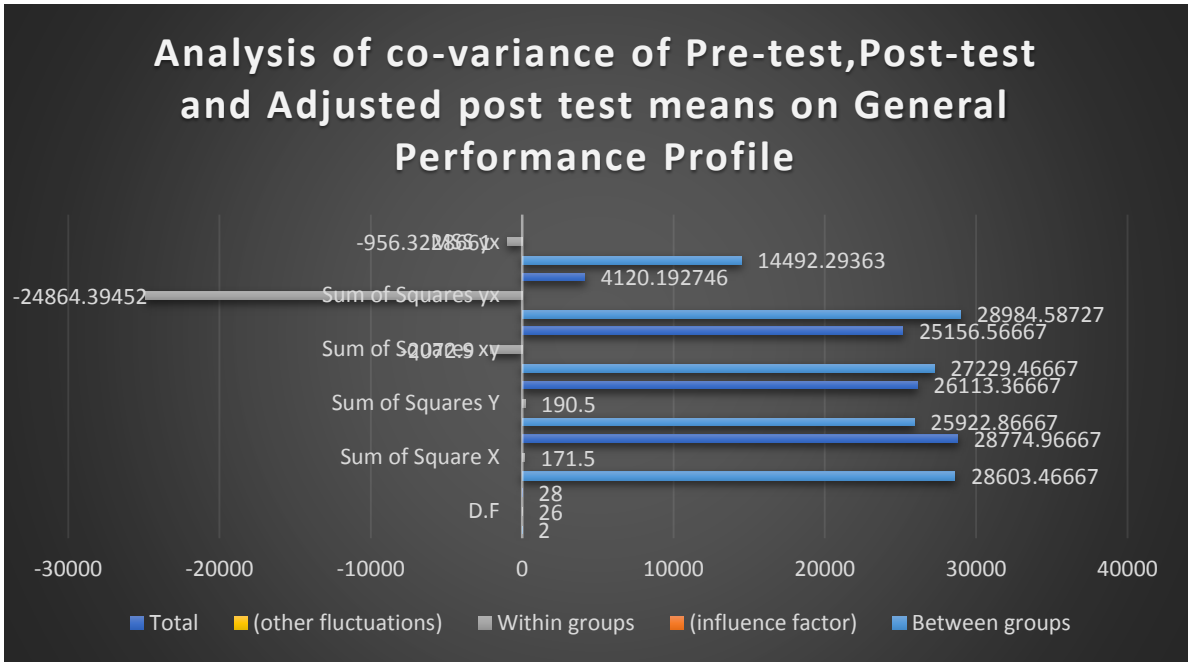

Figure-10

The analysis of co-variance for general performance profile was in significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test

means yielded an f ratio of -15.154 which was insignificant at 0.05 level of confidence. The F-ratio needed for significance 0.05 level of confidence was 1.706 .

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) on psychological performance inventory of Athletes were computed and data pertaining to that have been presented below in Table – 4.12

Table 4.12

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected psychological variable (psychological performance inventory) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Psychological performance inventory	Between groups (influence factor)	2	59.46666667	21.66666667	2.666666667	948.6081245	474.3040623	2.217
	Within groups (other fluctuations)	26	316.7	427	1377	-5560.14	-213.85	
	Total	28	376.1666667	448.6666667	1379.666667	-4611.53		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

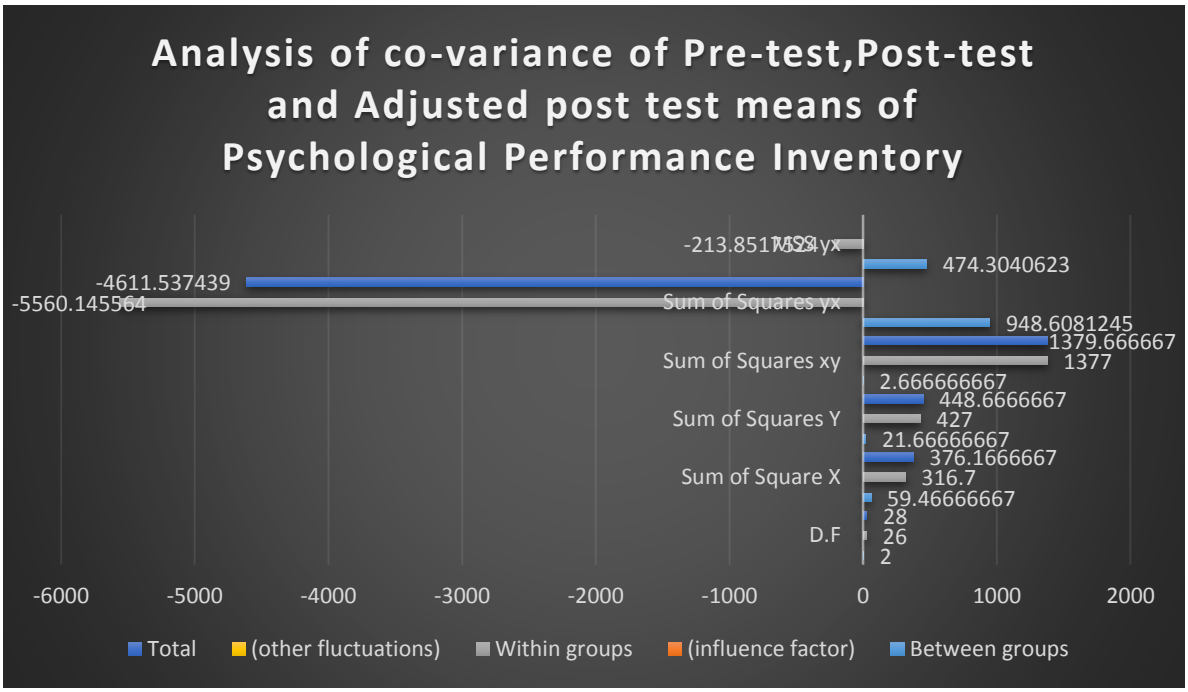

Figure-11

The analysis of co-variance for psychological performance inventory was not significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test means yielded an f ratio of -2.217 which was insignificant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

Analysis of Co-variance of the means of Control and Experimental groups (One on One & M-Mentoring) in selected Actual performance of Athletes were computed and data pertaining to that have been presented below in Table – 4.13

Table 4.13.

Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post Test on Selected Physical Measures (actual performance) of One on One Mentoring, M-Mentoring and Control Group.

Variables	Source of variation	D.F	Sum of Square X	Sum of Squares Y	Sum of Squares XY	Sum of Squares YX	MSS YX	F-value
Actual performance	Between groups (influence factor)	2	3.905006667	0.128686667	-0.617	169.4846367	84.74231835	2.220
	Within groups (other fluctuations)	26	23.19398	132.0693	161.482	-992.22	-38.16	
	Total	28	27.09898667	132.1979867	160.8655867	-822.73		

***Significant at 0.05 level of Confidence** **TAB. F.05 (2, 26) = 1.706**

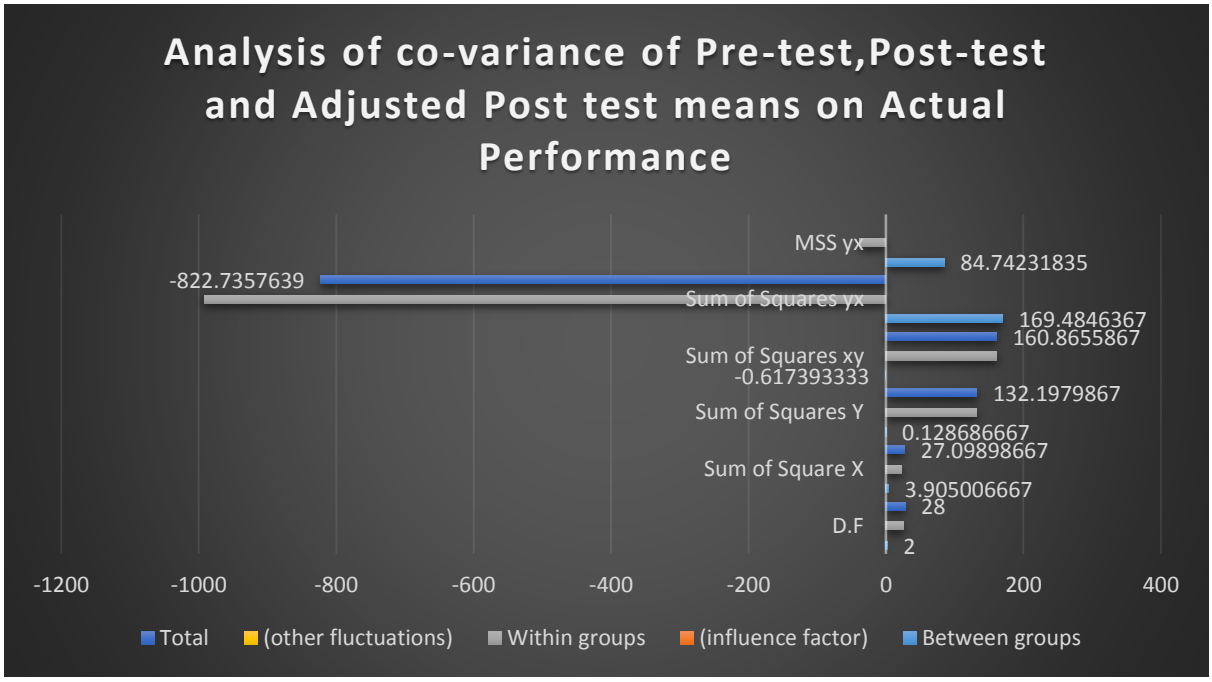

Figure-12

The analysis of co-variance for actual performance was in significant in case of pre-test means from which it is clear that the post-test means is insignificantly and that the random assignment of subjects to the two experimental groups was quite unsuccessful. The post-test means yielded an f ratio of -2.220 which was insignificant at 0.05 level of confidence. The F- ratio needed for significance 0.05 level of confidence was1.706.

DICUSSION ON FINDINGS

There was a significant result between one to one mentoring, m-mentoring on abdominal strength among sprinters. The obtained value in adjusted post- test mean of 9.83 is higher than the required value for the selected degree of freedom, which indicated that there has been a significant improvement in the abdominal strength of all the subjects belonging to two different experimental groups.Post hoc comparison of adjusted post- test mean scores revealed significant difference between the abdominal strength of the one to one mentoring group and m-mentoring group.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 0.001 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the hip flexibility of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 1.185 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the agility of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 0.11 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the acceleration speed of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 4.49 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the balance of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 3.984 is lower than the required

value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the cardio respiratory endurance of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 0.136 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the vital capacity of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 0.815 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the body fat percentage of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 15.154 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the general performance profile of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 2.217 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the psychological performance inventory of all the subjects belonging to two different experimental groups.

There was an insignificant result between one to one mentoring, m-mentoring on among sprinters. The obtained value in adjusted post- test mean of 2.20 is lower than the required value for the selected degree of freedom, which indicated that there has been an insignificant improvement in the actual performance of all the subjects belonging to two different experimental groups.

DISCUSSION ON FINDINGS OF HYPOTHESES

Based on the literature found, it is hypothesized that:

Hypothesis1: There would be a significance difference in the performance of athlete's practising under a specialized mentor.

Hypothesis2: The impact of different types of mentoring models will be similar in nature.

The finding of the study clearly shows that there is only one significant result of athletes from age group 18-22 years following 12 weeks mentoring. So physical variable (abdominal strength) shows significant as compare to other which shows insignificant (hip flexibility, agility, acceleration speed and balance).

And in second variable i.e Physiological variables there is also insignificant result following which include cardio-respiratory endurance, vital capacity and body fat percentage.

And in third variable i.e Psychological variables there is also an insignificant result following which include general performance profile and psychological performance inventory. At last, there is the actual performance which also shows insignificant result.

Therefore based on the findings the hypotheses as stated earlier that there would be a significance difference in the performance of athlete's practising under a specialized mentor and the impact of different types of mentoring models will be similar in nature of age group 18 to 22 years stands rejected here.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

The determination of this study is to research the mentoring model and its impact on athletic performance. The athletes opted for this experiments were belonging to individual events in athletics such as 100mt, 200mt, 400mt etc.

For the aim of study, thirty male athletes of lovely professional university, Phagwara was selected as a subject. The subject was selected following procedure of random selection. The average age of the athletes was from 18 to 22 years .The subject might belong to different mentoring models. Moreover, all the subject was divided in to three groups, two experimental and one control group, namely one to one, m-mentoring, Control group. Each group was comprised of ten athletes. After the proper medical checkup of all selected subjects, only then the mentoring program was applied.

Study was delimited to the twelve weeks of constant management underneath a mentor. And all the measurements were taken with the help of calibrated instruments and field tests before and after three months of mentoring programme.

After 12 months of mentoring the result is that just one variable of physical is significant as compare to other variables i.e only abdominal strength and to find from which factor it got significant we use post hoc test .and it shows one to one mentoring is better than other groups.

CONCLUSION

Under the conditions that triumphed and within the boundaries imposed by the type of subjects and the variables selected for this study, the following conclusion may be drawn.

1. The physical, Physiological and psychological variables are mainly governed by heredity of an individual, because of which it has shown negative response to either type of mentoring.
2. Long term mentoring plan may be directed to examine the actual response and may be good results found.
3. In Contrast to one to one mentoring, m-mentoring has showed less significant results, it showed better result than that of Control Group. Therefore in some cases mentoring may be given along with Training for better results.

4. Abdominal strength can also be significantly improved by one to one mentoring in 18 to 22 age group athletes.
5. Performance can be achieved with the combined efforts of sports persons, coaches, and mentors etc. And then desired results can only be achieved through combined efforts of leading people of various fields who can give valuable efforts for desired performances.

SUGGESTIONS AND RECCOMENDATIONS

The present investigation was showed on Indian universities track athletes to determine the role of mentoring models on athletic performance. The findings of this study would be helpful and provide a direction for future researcher in the field of mentoring as related to sports and games, following suggestions are being put forward for future research.

1. It is suggested that the result of this study could be considered as guidelines for coaches and schemes for mentoring where performance is important.
2. Coaches, and athletes should be made aware about the role of mentoring models which can help to the athletes at high level of competition.
3. Further, it is suggested that mentoring must be collaborated along with the coaching to predict performance in different games and sports in future studies.
4. Mentoring as a method may be successfully used for improving the performance of athletes of various sport groups.
5. The trainings may be planned for longer duration for better results.
6. The study may be accompanied on subjects of different age groups and sex.
7. The study may be done for athletes of different level and with larger sample.

Therefore these suggestions and recommendations are supportable for the further investigations. It can also make a number of good studies for the different Mentoring related interferences and variables to have a greater impact on athletes' performance.

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APPENDIX
APENDIX-A

Raw data of Athletes

Var : ▶ S.No: ▼	NAME OF THE STUDENTS	Mentoring models	Abdominal strength		Hip flexibility		Agility		Acceleration speed		Balance		C.r. endurance		Vital capacity		Body fat		GPI		PPI		Actual performance	
			Pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	Pre	post	pre	post	pre	post
1	Sundeep kumar	One to one mentoring	17	21	17.5	17.6	11.74	10.59	5.89	5.87	17	29	47	51	4.2	4.8	81	79	80	85	142	145	12.31	12.3
2	Brinder pal		19	22	17.6	17.9	11.79	10.79	5.41	5.39	21	27	51	54	4.7	5.2	69	65	87	89	147	149	13.1	13
3	Amarjot singh		23	26	16.45	16.46	9.47	9.46	5.44	5.43	31	35	39	41	4.1	4.3	70	67	84	86	149	155	11.1	11
4	Sanamjeet		16	19	18.5	18.9	10.12	10.11	5.81	5.8	18	23	46	52	4.1	4.2	80	79	79	81	144	147	14.41	14.4
5	Harjeet singh		17	18	16.31	16.35	12.43	12.42	5.99	5.98	20	23	49	51	4.5	4.8	84	83	82	83	143	144	14.3	14.2
6	Kulveer singh		15	17	17.5	17.31	13.41	13.4	6.89	6.87	21	24	53	55	3.1	3	66	65	81	84	139	141	15.31	15.3
7	Jagroop singh		14	19	14.2	14.1	12.34	12.33	5.99	5.98	23	24	55	57	4.2	4.1	45	44	83	86	141	143	14.89	14.87
8	Jarmanjeet		13	14	9.1	8.9	11.23	11.22	5.69	5.68	24	25	47	49	4.4	4.2	51	49	78	79	147	148	13.23	13.21
9	Agyapal singh		21	23	10.13	10.11	10.47	10.46	5.41	5,42	21	25	48	49	5.2	5.1	77	74	84	85	143	144	14.78	14.76
10	Lakhwinder singh		20	23	11.67	11.61	13.49	13.48	5.79	5.78	20	24	52	54	5.4	5.2	41	40	81	83	148	149	13.82	13.81
11	Devinder singh	M-mentoring	13	14	11.23	11.27	11.98	11.78	5.78	5.79	19	21	37	41	3.99	3.37	47	46	82	85	149	155	14.61	14.59
12	Jasdeep singh		15	17	14.15	14.57	10.71	10.65	5.91	5.9	21	25	41	44	4.13	4.09	61	59	83	88	140	144	14.01	13.99
13	Bhupinder singh		18	21	16.81	16.85	12.67	12.61	6.03	6.01	22	20	43	47	4.11	4.07	54	51	86	89	146	147	14.56	14.53
14	Captain singh		19	22	11.34	11.37	10.93	10.9	5.21	5.19	24	27	35	36	3.78	3.77	77	73	84	87	147	149	14.51	13.89
15	Gursewak singh		11	15	15.3	15.5	9.89	9.87	5.57	5.55	14	18	53	52	5.55	5.54	49	51	83	85	150	155	13.87	13.86
16	Raghav sharma		16	19	11.91	11.93	10.79	10.78	5.39	5.34	16	17	42	44	5.12	5.09	43	42	85	86	140	141	12.89	12.88
17	Gurwinder singh		13	14	12.98	12.99	11.67	11.65	6	5.95	19	21	33	35	4.78	4.77	53	52	81	83	147	148	14.47	14.43
18	Tarminder singh		15	16	9.51	9.55	12.03	12.02	5.98	5.91	21	23	39	41	5.16	5.13	62	60	82	83	139	143	12.67	12.57
19	Ranjeet singh		19	21	14.44	14.45	11.17	11.18	6.01	5.93	15	17	52	53	4.34	4.32	58	57	78	81	149	153	13.34	13.32
20	Sukhjinder singh		21	23	10.56	10.57	10.09	10.12	5.33	5.31	25	27	41	43	4.67	4.61	43	41	81	85	148	150	13.41	13.4
21	Rajesh sharma	Control	11	10	8.9	9	13.91	13.83	6.12	6.13	14	15	56	53	4.11	4.11	43	46	81	80	149	151	15.41	15.43
22	Praphdeep singh		13	13	7.91	7.91	14.98	15	5.78	5.78	11	13	41	43	4.78	4.74	31	30	84	79	151	148	14.78	14.79
23	Manpreet singh		15	14	5.31	5.35	12.67	12.68	5.41	5.39	16	17	56	56	4.56	4.58	56	56	79	81	145	142	14.98	14.98
24	Gurussharn singh		16	17	11.91	12.31	14.42	14.43	5.23	5.25	17	11	67	63	4.78	4.79	77	74	78	79	147	149	15.12	15.11
25	Kawal preet		19	19	12.33	12.33	15.1	15.12	5.89	5.87	19	19	54	57	3.91	3.87	65	64	77	77	146	146	14.41	14.4
26	Nirdev singh		15	15	17.43	17.45	14.98	14.98	5.23	5.23	15	13	34	32	5.34	5.45	45	49	85	82	149	147	14.56	14.57
27	Gurpreet singh		14	13	16.32	16.31	14.81	14.8	5.93	5.89	16	17	78	80	5.34	5.51	78	78	82	83	151	150	14.34	14.77
28	Pritam		13	13	14.23	14.2	13.71	13.77	5.36	5.37	23	20	65	65	5.12	5.12	53	52	84	79	147	146	13.67	3.65
29	Amrinder singh		16	17	12.51	12.55	14.56	14.61	6.02	6.01	14	15	78	79	4.38	4.41	48	49	87	88	149	147	13.53	13.54
30	Attinder singh		17	18	11.76	12.23	15.76	15.77	5.47	5.47	16	13	79	78	3.98	3.99	43	47	88	87	143	144	14.59	14.63

Appendix-B

DEMOGRAPHIC AND BACKGROUND CHARACTERISTICS

Name: Age: Sex: M / F

Education:

Sport Achievement:

a. For how many years have you been participating in your Sport? ……..Years

b. How much time do you devote to training and related activities (such as reading, watching videos in your sport etc.?)…….. Hours. The average number of hours per week during the year.

c. Based on your experiences how important are psychological or mental factors in determining success at National / International Levels of Competition.

Not at all Important	somewhat important	extremely important	
1 2 3 4 5 6 7 8	9 10	National (circle any one)	
1 2 3 4 5 6 7 8	9 10	International (circle any one)	
Marital Status:		Married	Single

Address: (Local)

(Home)

E-mail Id if Any:

Please Note

The answers given by you will be kept strictly confidential. If you wish to know regarding your score in any of the factors tested it will be provided. For any further discussion if you wish to have, you can contact in the E-mail ID of *susant_z@yahoo.com or alpana.susant@yahoo.com. This information will be used for research purpose only.*

THANK YOU FOR YOUR COOPERATION

Appendix – C

PSYCHOLOGICAL PERFORMANCE INVENTORY (PPI)

Instructions: To help you get a clearer idea of your mental strengths relative to the seven variables of mental toughness, place an (√) in one of the five spaces for each item in the following list. Place only one check for each item. Your choices are Almost Always, Often, Sometimes, Seldom and Almost Never. Select whichever one best fits your interpretation of the item. Your response is simply as estimate. Be as open as you can with yourself and respond to each item as it pertains to you in the right here-and-now context.

	ITEMS	Almost Always	Often	Some - times	Seldom	Almost never
1	I see myself as more of a loser than a winner in competition.	1	2	3	4	5
2	I am angry and frustrated during competition.					
3	I become distracted and lose my focus during competition.					
4	Before competition, I picture myself performing perfectly.					
5	I am highly motivated to play my best.					
6	I can keep strong positive emotion flowing during competition.					
7	I am positive thinker during competition.					
8	I believe in myself as a player.					
9	I get nervous or afraid in competition.					
10	It seems my mind starts racing 100mph during critical moments of competition.					
11	I mentally practice my physical skills.					
12	The goals I've set for myself as a player keep me working hard.					
13	I am able to enjoy competition even when I face lots of difficult problems.					

14	My self-talk during competition is negative.					
15	I lose my confidence very quickly.					
16	Mistakes get me feeling and thinking negatively.					
17	I can clear interfering emotion quickly and regain my focus.					
18	Thinking in pictures about my sport comes easy for me.					
19	I don't have to be pushed to play or practice hard. I am my own best igniter.					
20	I tend to get emotionally flat when things turn against me during play.					
21	I give 100 percent effort during play, no matter what.					
22	I can perform toward the upper range of my talent and skill.					
23	My muscles become overly tight during competition.					
		Almost Always	**Often**	**Some - times**	**Seldom**	**Almost never**
24	I get spacey during competition.					
25	I visualize working through tough situations prior to competition.					
26	I'm willing to give whatever it takes to reach my full potential as a player.					
27	I practice with high positive intensity.					

28	I can change negative moods into positive ones by controlling my thinking.					
29	I'm a mentally tough competitor.					
30	Uncontrollable events like the wind, cheating opponents, and bad referees get me very upset.					
31	I find myself thinking of past mistakes or missed opportunities as I play.					
32	I use images during play that help me perform better.					
33	I get bored and burned out.					
34	I get challenged and inspired in tough situations.					
35	My coaches would say I have a good attitude.					
36	I project the outward image of a confident fighter.					
37	I can remain calm during competition when confused by problems.					
38	My concentration is easily broken.					
39	When I visualize myself playing, I can see and feel things vividly.					

40	I wake up in the morning and am really excited about playing and practicing.					
41	Playing this sport gives me a genuine sense of joy and fulfilment.					
42	I can turn crisis into opportunity.					

Appendix – D

GOALSETTING

MEDIUM-TERM GOALS

More specifically what areas do you need to improve in order to achieve your goal?

PHYSICAL _____

_____

_____

_____

MENTAL _____

_____

_____

_____

TECHNICAL_____

_____

_____

_____

*Each of these attributes in now a short-term goal which if achieved will help achieve the long-term goal.

PERSONAL GOALSETTING CONTRACT

I, _____ do hereby commit myself to the following goals and activities for this year.

This agreement with myself should be in effect from _____

The goals I set for myself are:

Technical

1: _____

2: _____

3: _____

4: _____

Physical:

1. _____

2: _____

Mental:

1: _____

2: _____

I realize I may sabotage my plan by: _____

_____

So I will avoid this by: _____

_____

The short and long term benefits which I will realize by fulfilling my goals are_____

_____

I agree to make a commitment to give my best effort to achieve my goals.

Signed_____Date_____

Witness_____

Appendix – E

GOAL SETTING

IDENITIFICATION OF STRENGTH AND WEAKNESSES

NAME: - AGE:-

SPORT ACHIEVEMET (SPECIFY THE EVENT):-

Answer all the questions. Take your time. Reflect on what occurs most of the time not on just one or two occasions.

SL NO	GOAL SETTING	YES	NO
1	Do you have a long-term sport goal?		
2	Is your long-term goal a specific one?		
3	Have you set a time when you aim to achieve this goal?		
4	Can your goal be achieved independent of the team's or other Athlete's performance? (i.e., is your goal dependent only on Your personal performance?)		
5	Do you have written goal programme?		
6	Do you have a means for measuring and recording your improvement?		
7	Does your programme consist of intermediate and short-term goals?		
8	Is your goal the outcome of your performance? (i.e., a win, a medal, a team position)		

Appendix – F

GENERAL PERFORMANCE PROFILE

RATING SCALE

PERFORMERS IDEAL

TRAINER IDEAL

0-10 SCALE

Taking various aspects of the training a rating scale can be prepared and both the coach and the athlete can be asked to rate how close they are to the ideal and again after training they can be asked again to rate to see the improvement. This will give an idea regarding RIGHT NOW situation and the IDEAL SITUATION.

SL NO	CHARACTERISTICS	**Not At all**									**Very Much so**
1	**Confidence in Competition**	1	2	3	4	5	6	7	8	9	10
2	Relaxation skill	1	2	3	4	5	6	7	8	9	10
3	Aerobic fitness	1	2	3	4	5	6	7	8	9	10
4	Anaerobic Power	1	2	3	4	5	6	7	8	9	10
5	Anaerobic endurance	1	2	3	4	5	6	7	8	9	10
6	Imagination	1	2	3	4	5	6	7	8	9	10
7	Determination	1	2	3	4	5	6	7	8	9	10
8	Concentration	1	2	3	4	5	6	7	8	9	10
9	Motivation	1	2	3	4	5	6	7	8	9	10
10	Enjoyment	1	2	3	4	5	6	7	8	9	10

11	Technical Ability	1 2 3 4 5 6 7 8 9 10
12	Originality	1 2 3 4 5 6 7 8 9 10
13	Will to win	1 2 3 4 5 6 7 8 9 10
14	Flexibility	1 2 3 4 5 6 7 8 9 10