There cannot be two opinions about the need for review of the related literature. In the very beginning it helps in a careful and methodical perusal of the study at hand. It not only serves to solve the problem but also enormously helps in broadening and deepening our understanding of the published research work in the related field. A review of the concerned literature helps to ascertain that the same has not been put to scrutiny before.

The review, cited in this chapter has definitely helped the researcher to imbibe his awareness and understanding of the various techniques available for conducting such a study and formulating ideas that profoundly contributed to the overall rationale and interpretation of the data gleaned and compiled with great effort. In the process of conducting the study, the researcher was bound to be zealous and meticulous which, in turn, brought about awareness of the peripheral issues that undoubtedly helped him in forming scientific reference.

The review enlisted in this chapter was based on various sources viz-a-viz journals, periodicals, encyclopedia, newspaper, unpublished thesis etc. which were available in various libraries. The libraries which the scholar consulted, were Panjab University Chandigarh, Punjabi University Patiala, Netaji Subash National Institute of Sports, Patiala, Kurukshetra University Kurukshetra, Lakshmibai National College of Physical Education, Gwalior. The relevant literature pertaining to the present study has been abstracted in this chapter to provide the background material to evaluate the significance of this study as well as to interpret its findings.
Edgren (1932) attempted to predict the actual playing ability of beginners basketball players through the developed motor ability and specific basketball skill tests and concluded that the potential playing ability in basketball could be predicted through the general motor ability.

Young and Moser (1934) reported that the playing ability in women's basketball was depended upon the ability in skills 'speed passing', 'accuracy in passing to moving target', 'bounce and shot', 'basketball handling Skills' and 'jump and reach ability' of a player.

Carpenter (1938) investigated through a study with college women and found a correlation of .526 between Sargent jump and track and field scores. She felt and proved that this demonstration showed a positive correlation between power and athletic performance as judged by Track and Field scores.

Dyer (1939) has concluded that skills necessary to be successful in basketball are of two general types:

(i) Strategic ability
(ii) Motor ability

He has further concluded that possession of high motor skill alone does not make a player successful and four skills namely 'passing to a moving target', 'ball handling', 'bouncing and shooting to a target' and 'jump' are also necessary to be successful in basketball.

Eversetf (1952) tested thirty varsity baseball players of the University of low on ability to throw for distance, running speed and agility (shuttle run), ability to visualize partial relationship (Thrustone's 'S' test), ability to make decision quickly (the blocks test) and motor capacity (the General Motor Capacity Score). These subjects were rated according to playing ability by the coach.
Product Moment Correlation, partial Correlation and Multiple Correlation were computed and the following conclusions were made:

(1) Sargent Jump was the best single measure for selecting baseball talent.

(2) The best economical combination to predict baseball-playing ability was the Sargent jump, 'S' test, and Blocks test.

\[ T \text{ score} = 0.92 \text{ Sargent Jump (cm.)} - 0.08 \text{ 'S' test (score)} - 0.23 \text{ Blocks Test (sec.)} + 16.19 \]

Clarke (1957) studied the relationship of sixteen strength and ten anthropometrics tests involving eight trunk and leg measures, dynamic strength, muscular endurance, agility and power by correlation methods. The highest strength test inter- correlation was .65 between trunk flexion and extension, significantly. Multiple correlations obtained were .74 for leg lift with body weight, ankle dorsal flexion strength .71 for back lift with knee extension strength, hip width, trunk flexion, strength and Knee extension strength and .66 for standing broad jump and adipose tissue over the abdomen and hip extension strength.

Ellena (1960) studied the relationship of various physiological factors to football performance. Minutes played during the 1958 football season were used as the criterion. Players were measured in the 50-yard dash, right hand grip, left hand grip, and arm push and pull strength. Speed correlated .60 and total strength .40 with the criterion. Both correlations were significant but the predictive value for minutes played was slight.

Ikeda (1960) administered a series of tests including wrist flexibility, shuttle run and various measure of kinesthesis, such as arm forward, wrist extension, wrist flexion, target finger spread, supination, pronation and grip pressure on 72 women students during the last two week of an eight week badminton camp. These test scores were compared
to the results of the volley and clear badminton tests. There was no significant relationship between wrist flexibility, Kinesthesia or agility and badminton playing ability.

Pierson and Phillip (1960) conducted a study that Bruce Physical Fitness Index as a predictor of performance in trained distance runners. Eleven (N=11) high school cross-country runners were taken as the subject of the study. An effort was made to determine the relationship between score and performance. Lean Body Mass was calculated according to Rathbun – Pace and Cawgill formula. The inter- correlation of the selected anthropometrics and physiological measurements were recorded during the investigation. The mean score of 32 found for the subjects were considerably above the 26 considered characteristics of athletes on the Bruce Continuum. The man with best performance (9.56 min.) made the highest score (40) on the Bruce Physical Fitness Index, but the man with poorest performance (11.39 min) made the second highest score (37).

When performance of all subjects was correlated with their Bruce Physical Fitness Index ‘r’ was found to be 0.47, which was not statistically significant. The correlation between performance of the total heart count for the first three minutes. Immediately after exercise was ‘r’ 0.52 which was also not significant.

Burely and Anderson Jr. (1961) found that power measured by the jump and reach test was closely associated with athletic success. They reported that power was more closely associated with track, swimming, basketball and baseball than with boxing and wrestling, tennis and possibly football.

Peterson (1962) tried to predict basketball performance using psychomotor, cognitive and anthropometrics measures. The sample included forty- three female basketball players. The contribution of GPA,
anaerobic, leg power, fifteen yards dash, Thirty - yards dash, total body
RT, TRT, height and weight to basketball performance once was determined. It was found that only height ($r = .388$) was a significant ($p$ less than .05) predictor. The fifteen-yard dash total body RT and power were next in order. The $r$ for the four top variables was 0.56 ($p'$ less than .01).

Vendel (1962) studied the criteria for predicting success in modern pentathlon. Questionnaire returns from 55 Pentathletes active since 1954. Showed that the successful ones were distinguished by knowledge of more Pentathlon related sports before training on 10 of IHI some financial education at assistance, composition in approximately six individual sports, playing chess occasionally, never smoking being lightly under weight for their body build having a low pulse rate (56 at rest) having low blood pressure, having five disease in their life time, having the family wage earner in the ‘service’ category being cautious self sufficient and self confident.

Sisley (1964) studied kinesthesia in relation to skill level in basketball, bowling and tennis. The basketball players, selected from extramural team, and the physical education major’s tournament, were given the Leilich Basketball Test Battery. The tennis players, selected from intermediate classes, had the highest scores on the Dyer Backboard Test. The bowlers selected were those having the best averages for the last 10 lines in bowling classes in the previous semester. The 60 subjects were given a kinesthesia test battery developed by Roloff consisting of balance stick, weight shift and arm raising items. The relationship between kinesthesia and skill level in basketball, bowling and tennis was negligible.

Synder (1965) designed an experiment involving proficiency in performing four selected physical skills, which were the predictors of basketball playing ability. The four skill tests not requiring ball-handling
ability were given as a pre-test. After three week instructions of Johnson Basketball Test were given and performance was recorded during low scrimmage performance. It was concluded that the highest correlation was found in Johnson Basketball Skill Test and scrimmage performance ($r=0.526$).

Holland (1965) conducted a study on the predictive value of selected variables in determining the ability to play basketball in small high schools. In order to predict basket ball playing ability, he included variables such as speed, agility, upper arm strength, power, ball handling ability, reaction time, shooting ability, passing ability, height weight, age and previous experience. The criterion was the rating of basketball playing ability of each squad member by his coach. The most important variables were found to be experience, ball-handling ability, passing ability and shooting ability. The weighted index with $r' = 0.76$, Basketball Ball handling ability score=1.54, number of years of experience +. 1.23, score on speed dribble +. 26, speed on wall volley +. 15, and score on shooting test −10.11

Suhultz (1965) studied the effects of direct practice repetitive sprinting and weight training on selected motor performance tests. Six training approaches were used to study the effectiveness upon performance in four-selected test of motor skill, speed, coordination and power. Subjects were 120 men volunteers enrolled in the Indiana University service programme. The subjects were randomly assigned to groups and groups to treatments, short periods of training or cessation of training did not affect performance, except in case of zig-zag run. Direct practice of the zig-zag run was found to be superior to both weight training and repetitive sprinting in the performance over a nine-week period.

Vincent (1967) measured 37 college women enrolled in eight physical education activity courses in attitude, strength and efficiency.
Partial and multiple correlations were calculated between these independent variables and success in physical education activities. Regression equations consisting of various combinations of the three independent variables were formulated and tested by analysis of variance. All prediction batteries were significant in the prediction of success in physical education activities, and the following conclusions were drawn.

(1) Success in physical education activities can be predicted from the various items under consideration.

(2) Among the variables studied as possible contributors to success in physical education activities, the attitude measures were of the highest significance.

(3) The use of attitude item alone can be considered as adequate while the inclusion of the strength item is desirable in the prediction of success in physical education activities.

Cranston (1968) used a reaction time, movement time device a pursuit rotary, and the Miller badminton wall volley test to collect the data on 32 college women enrolled in badminton classes at Smith College. Reaction time, movement time and visual tracking had no apparent relationship to performance in badminton.

Singer (1968) obtained measures of reaction time, response time and movement accuracy on a specially designed apparatus on sixty six college women enrolled in fencing classes. The subjects then foil – fenced in round robin tournament. Criterion measures of fencing achievement derived from tournament matches correlated little better than zero with reaction time, response time, and movement accuracy.

Lambe (1969) studied the relationship of physical fitness to selected motor fitness items. He gathered data from 60 male students and divided them into groups of high and low fitness and measured by
the PF 1. It was concluded that students possessing greater qualities of fitness as measured by the 35 yard dash with 15 yard running start reaction time, Sargent jump, 100 Yard shuttle run and Cozen’s Dodge Run.

Harrison (1969) has stated that performance abilities in basketball are dependant upon four main areas of skills namely shooting, passing, dribbling and jumping.

Gilbert (1969) conducted a study of selected variables in predicting basketball player’s ability and performance at college level. He demonstrated that at the college level a battery of four independent variables selected from total of ten variables best reflect composite basketball ability and performance. These four variables include ability criterion, arm strength, penny cup test and speed pass. However, since the desired multiple r of .95 was not reached, this limits the utilization of this battery as a predictive measure of basketball ability.

Gallagher (1970) investigated the relationship of agility to performance in women intercollegiate basketball. The hypothesis that high positive relationship would exist between items of the test (Mc Cauliff Agility Components Test) and performance were not supported. The lack of evidence of support the hypothesis was attributed to some unexpected peculiarities of the sample and several recommendations were made for continued investigation.

Voll (1970) determined if ability in basic modern dance skill could be predicted by means of selected anthropometrics and physical fitness measurements. Data for this study was collected on 24 female students participating in one of three No-Eastern Pennsylvania colleges. Measurements of height, weight, sitting vertex height, left trochanterion height, left tibiae, upper leg length, flexibility, abdominal strength, leg strength, cardio-vascular fitness, and somatotype was taken. As results
of statistical treatment, a regression equation with a multiple R of .8678 was presented by the author for the prediction of ability in basic modern dance skills and prediction tables for its computation were developed. The author concluded that ability in modern dance skill could be predicted from selected anthropometrics and physical fitness measurements.

Bowman (1971) investigated the relationship between twenty-nine biographical, physiological and psychological factors and success in wrestling. One hundred thirty six Idaho high school wrestlers were tested during the 1969-70 wrestling season. The data from the factor tests and the seasons won – loss records were analyzed by multiple correlation and regression analysis. The findings of this study were:

(1) All twenty-nine independent variables, the biolographic, physiological and psychological variables were significantly related to wrestling success at the .05 levels. Seven factors – age, years of wrestling experience, hand grip strength, upper body strength, cardio-vascular endurance, desire to achieve and desire to experiment were significantly related to the wrestling success at the .05 level.

Ellen burg (1971) conducted a study to predict selected physical variables in determining competitive performance in high school basketball player in 1969. The performance data were collected by performance rating chart. Pearson’s Product Moment Correlation, Multiple Correlation and Multiple Regression Equation were used. The results of the study were as follow:

1. Out of the variables used in the study, thirty seconds shooting test and vertical jump were most reliable predictors for the performance used in the study.
2. Height, handgrip, vertical jump, wall volley and thirty-second shooting tests were most important variables contributing to a player's performance.

3. The five items battery consisting of height, handgrip, vertical jump, wall volley, thirty second shooting test can be a practical and useful instruments in predicting basket ball performance of high school basket ball players.

Rydalch (1971) investigated the relationship between fourteen biographical factors and player's success in Junior College football. Data were collected on 812 subjects' football players from 17 junior colleges located in eight states. Head football coaches of the participating colleges rated their own individual and the ratings of their coaches were analyzed by multiple correlation and regression analysis at Brigham Young University in Provo, Utah. The findings of the study were:

(1) The twelve independent variables which were analyzed were significantly related to football success at the .01 level

(2) Six factors – Speed, weight, and team record in high school, height and size of school were selected as those variables with the highest relationship to success.

Prestige (1972) emphasizing the role of co-ordination and timing, states that there must be co-ordination for each skill achievement and when coupled with correct timing will produce the successful performance of that skill.

Childress (1972) conducted a factor and discriminate analysis to identify and determine the effectiveness of selected physical variables in predicting successful basketball performance. Twenty-four test items were selected through a review of literature as a valid measure of components of high school basketball ability. The test items were administered to 106 high school basketball players and the resultant
data were analyzed through factor analysis. Seven factors were isolated and six were identified as agility, speed, relative muscular endurance, basketball speed manipulation, gross muscular strength, total body movement time and manual dexterity. Two test batteries were constructed, the first consisting of seven test items and the second was composed of the ten test items. The result of the study showed that the component of basketball ability could be isolated, measured and utilized to construct an evaluation tool for classifying and evaluating tool for classifying players into two populations identified as successful and unsuccessful.

Hill (1972) made a study taking 133 male and 133 female subjects between 5 and 8 years of age. The data shows the following findings. Both reaction time and movement time decreased significantly with increasing age. Both of these functions were significantly related to each item of the physical fitness test. Both correlated significantly with the motor ability criterion, but however in combination with other variability's considered they had no value in the prediction of motor ability.

Tergersen (1972) administered the French Short Serve and Clear Test and the Miller Wall Volley Test to 23 sophomore college women who had just completed a semester of badminton. Motor ability was measured with the Scott Test, palmer and dorsal flexion strength with a tensiometer, temporal vision with a perimeter and depth perception with a Howard Dolman apparatus. Total badminton playing ability correlated significantly with general motor ability, depth perception and peripheral vision. The Wall Volley Test found significantly correlated with motor ability and depth perception.

Alexander (1973) conducted a study to ascertain the structure and nature of the factors which contribute to motor performance. In particular, the difference in the clustering of the variables of motor
performance between men and women majority in physical education was of concern. Subjects (N=105) female and (N=40) male students were enrolled in professional physical education at Murrary State University. The oblique rotation procedures as well as four factor analysis models were used. A 34 items test battery was administered to each of the subjects solution yielded six robust for the female. The six robust factors that existed in the domain for the male group were leg strength, speed, arm and shoulder girdle strength and endurance, arm explosive strength and endurance, arm explosive strength projecting objectives basketball skill, muscular strength and endurance and grip strength and finger speed. The five that existed for the female group were muscular endurance and agility, leg power, upper body explosive strength for propelling objects, balance and static strength of the arms.

In the light of these studies the researcher selected AAHPER Youth Fitness Test battery for holding physical fitness test for both sexes and modified Barrow Motor Ability Test items for boys and Morison Test Battery For Girls.

Huntly (1974) made a study on physical fitness and motor ability to find out the effect of these selected physical activities in 1961. Subject selected at random from first, second and third grade students, who were involved in this study: out of three experimental groups within each grade. An analysis of the results revealed that both physical fitness and motor ability attributes, excluding body reaction time can be significantly improved by structured physical education programme consisting of basic movement and rhythmic activities, games and gymnastics. The best contribution to physical and motor ability resulted from participation in games and related activities.

Mickalek (1974) in his study on ‘Selected measure as predictors of success in gymnastics” found that the gymnasts differ significantly on
explosive power, vertical jump than the non athletes and track and field athletes significantly better then non-athlete on vertical jump.

Ronald (1975) found the contribution of selected fitness variables to college football game performance. Thirty members of the south Eastern State Collegiate Football Teams were selected for this study. From the Multiple Correlation Coefficient, it was found that best predictor of game parentage for defenders were lateral movement for the forwards the best predictor of game percentage was bench step. For combined group the best predictor of game percentage score was vertical jump. For total group it was found that vertical jump and 12 minutes run was two best predictors.

Atkinson (1977) investigated predicting performance in tennis, badminton and handball players from certain physical traits. Regression equations, using physical traits and class commitment as predictors, were developed for determining potential skill in beginning tennis, badminton and handball for college men. The physical traits used were: agility, power, hand-eye coordination and visual acquit. Skill level was determined by a round robin tournament in each sport. Subjects were 140 college men enrolled in beginning classes for each sports and taught by the whole part method. Control subjects included 138 students enrolled in other beginning classes and taught by the part method. Another purpose of the study was to determine whether practice in the sports would significantly improve, scores on the physical traits. A 't' ratio was used to compare experimental and control groups. Conclusions were: class commitment is probably an integral part of skill attainment in the sports studied. Students who were taught tennis and badminton by the whole part method experienced greater gains in shoulder girdle power.

Mc. David (1977) predicted football potential from the scores on a football potential test. The study was conducted on 67 football players.
and the test battery consisted of motor ability items as well as football skill items (McCloys Classification Index, Strength, Power, Time to Hit, Audio Visual, Agility, Speed, Work Output). Substantial correlations were obtained between most test items and the test criterion, the sum of ‘t’ scores; size as depicted by Mc Cloy’s Classification Index (C.I) had a negative, non-significant correlation with the criterion. The discriminative power of the battery was evidenced by the highly significant correlation between the test criterion and the coaching staff’s ranking of individual players (r.h.o= .840) it was concluded that athletic potential in football could be predicted by testing.

Kacevich (1978) obtained simple reaction time, movement time, and total response time (RT+MT) in the laboratory and on the football field for a group of 82 varsity football players to determine relationship between TRT and general football playing ability and TRT and individuals playing different positions. Finally, simple reaction time as measured in a laboratory situation was compared with simple time measured in a field situation. Each subject was assigned to one of eight groups, depending upon the individual’s general football playing ability and to one of five position categories. Statistically signs were calculated between, TRT and Team ranking and TRT and Individuals playing different position. A low positive relationship between simple lab RT and simple field RT was calculated.

Dashaies (1978) conducted a study on psycho- biological approaches as the prediction of individual performance of junior ice hockey players. One hundred and sixteen (N=116) junior major league hockey players from Quebec were selected as the subjects of the study. All subjects were measured on fourteen (14) variables fall in the biological, psychological and specific motor skill categories. The step-wise regression analysis had been done. A prediction equation was obtained which included the following four variables i.e. forward speed
skating, motivation, visual perceptual speed and anaerobic power. The multiple correlation coefficient was obtained \( r^2 = 0.74 \). The 55 percent of variance in the ice hockey playing ability accounted for the psychological profile. It was larger than that observed individually for the biological 17 percent, psychological 20 percent and the specific skill profile 33 percent.

Amusa (1979) selected 46 students, who were well-conditioned soccer players with at least two years playing experience at the college level. They were tested for running speed, power, agility, and max. \( \text{VO}_2 \), strength, anaerobic capacity and flexibility. In addition, 11 anthropometrics measurements consisting of skin fold and body diameters etc. were taken. Soccer playing ability served as the criterion and was measured by the ratings of three experienced soccer coaches based on selected soccer skills and strategies. Analysis of data was made by zero order correlation and multiple regression analysis resulting in the following conclusions: age (experience) is the best single predictor of playing ability. Weight, L.B.W. and height were considered good predictors of playing ability. Max. \( \text{VO}_2 \) and running speed are considered important factors in soccer performance. Flexibility, agility, lactate concentration and leg power were not considered as valid indicators of playing ability.

Gordon (1979) predicted basketball-playing ability from cardiovascular capacity, leg power, upper body strength and endurance, body composition, and body height. Subjects were 20 women varsity basketball players from two colleges, 10 from each college separate prediction equation were developed for five criterion measures, an ability rating consisting of four offensive – defensive descriptive terms the Tutko- Richard General Personality Rating. Composite score of the two measures the Noll Comparative Rating Scale, which utilized game statistics and the rating of the players by the coach. Data were analyzed
through Step - Wise Multiple Regression Programme the best prediction equation was found to be.

Basketball ability = 9.053 + 1.364 (12 minute run) − 0.113 height

Ostrovsky (1980) after studying seventy-three basketball players with twenty-seven tests found that the following seven factors share up to 84.0 percent in the total dispersion of playing ability.

Physical qualities
a. Speed combined with dexterity.
b. Quality of Jump.
c. Speed endurance.

Technical Skill

d. Accuracy of long shooting.
e. Nationality of dribbling.
f. Technique of defense.
g. Accuracy of high-speed pass.

An inter-connected test battery involving all those factors was constructed and utilized by him in coaching for the four top league basketball teams.

Battles (1980) tried to develop a prediction equation for selection of women inter-collegiate basketball team members. The sample of the study included thirty-three female basketball players. Each subject completed a data form, the Athlete Motivational Inventory (AMI), the Knox Basketball Test, Sargent Jump Test, and Field Goal Speed Test. In addition to these some selected anthropometrics measurement were also taken. Three different rankings including head coach ranking, the assistant coaches ranking and averaged ranking of head and the assistant coaches were included in the statistical analysis. The results
revealed significant correlation (0.05 level) between Head coach’s ranking and the age and college basketball experience. The Step Wise Multiple Regression indicated that the players ranked high by coaches tend to score high on a combination of physical, experience height, vertical jump, and mental toughness and AMI total score. It was also found that the Assistant Coaches tend to select players with high score on psychological variables, which include trust, responsibility, mental toughness and aggression. The average ranking of the Head coach and Assistant (S) favored players with college basketball experience, responsibility, mental toughness, age and self-confidence.

Bhanot and Sidhu (1980) conducted a study on 90 hockey players including 10 goalkeepers, 16 backs, 22 half backs and 44 forwards. Maximal vertical velocity was determined. The anaerobic power was calculated from the body weight and the maximal vertical velocity of the players. The goalkeepers were the fastest in vertical velocity and possessed best anaerobic power and halfbacks in vertical velocity. The forwards were the slowest in vertical velocity and possessed minimum aerobic power. In body weight halfbacks, goalkeepers and forwards heaviest followed the backs. In the back line the lefts had high anaerobic power with more vertical velocity and body weights than rights. Among half line left halfbacks and right halfbacks both in body weight and an aerobic power followed players the centre halfbacks, while in vertical velocity the left halfbacks were the fastest and center halfbacks the slowest. Among forwards they had maximum anaerobic power and body weight followed by inside forwards and outside forwards whereas in vertical velocity the inside forwards were more powerful followed by center forwards and outside forwards.

Hachn (1980) studied the Knox basketball test as a predictive measure of overall ability in of female high school basketball players, the Knox Basketball Test was administered on one hundred and ninety eight
(N=198) girls. The step-wise multiple regression procedure was used to analyze the predictive value of this test. It was found that for the selection of the players dribble shoot test was the significant predictor. The dribble shoot test also significantly correlated with the coaches ranking of junior varsity players and varsity players, the speed pass and speed dribble significantly predict the division between the junior varsity and varsity players. Although the comparison was significant to skill test accounted for only 11.1% to 28.31% of the total variation in the dependent variables.

Tanaka and Matsura (1982) took anthropometric and physiological variables of 114 Japanese young and long distance runners and concluded that the anthropometric attributes would predict the distance running performance to about the same degree as physiological attributes. As a result of factor analysis and the multiple regression analysis, three factors i.e. linearity of physique, girth of physique and subcutaneous fat, were extracted and the first to factors were equally related to the 800, 1500 and 5000 meters performance. The 10,000 meters however was best accounted for by the second factor.

Zhou, Hadgson and Soto (1982) in their study of prediction of running speed among middle and long distance runners, anaerobic power output (APO) and heart rate during and after 30 sec, all out cycling were measured on top level U.S. runners. VO\textsubscript{2} max. was measured separately during treadmill running. Among 800m runners, anaerobic power output was the most important predictor whereas VO\textsubscript{2} max, become progressively more important as running distance increased.

Toner (1982) examined the relationship of physical fitness skill and mood variables with success in female high school basketball candidates being chosen to become varsity players. McNair's profile of mood states, Copper's 12 min. run and walk Test, AAHPER Jump and Reach Test.
AAPHER Shuttle Run Test, 30 yard dash, AAPHER Under Basket Shot Test, AAPHER Speed Pass Test, and the AAPHER Speed Dribble Test were administered on 81 female high school basketball players. At the end of the testing and evaluation period, the jury of coaches, on the basis of their observations during drills and scrimmage competition, independently rated each player as either successful or an unsuccessful performer. Discriminate analysis procedures supported the following hypothesis: (a) The fitness factor, skill tests and personal factors (Know together as pre-season variables) Were successful indicators of groups membership while the POMS variables were to a lesser extent and (b) the battery of tests preseason and POMS variables did correlate with coach's rating.

Williams (1984) examined the relationship of selected natural traits of quickness speed, jumping power, shooting success, agility, height and weight to game performance on fifty male college basketball players. Basketball game statistics were used to compute a statistical game performance for each subject. The simultaneous solution and the forward stepwise inclusion techniques of the multiple regression analysis were administrated to the raw data. The individual and group correlations were determined to see the relationship of the natural traits (independent variables) to the statistical game performance (dependent variable). Of the seven natural traits of quickness, speed, jumping power, shooting success, agility, height and weight only shooting success was found to have a significant, correlation (at the .05 level of significant) to the statistical game performance of basketball players.

Datta (1984) while investigating on selected physical, physiological and psychological variables as predictors in hockey performance founds that there was significant relationship between cardio- respiratory endurance, resting pulse rate, hand reaction time, speed of movement, response time and body composition to hockey playing ability. The
relationship between percentage body fat and playing ability showed that higher percentage of body fat might be considered as an extra burden or dead weight which the individual had to carry and which consequently reduced the efficiency of the players. The hockey players who had scored better in hockey playing ability had a lower percentage of fat as compared to those who gave poor performance in hockey playing ability.

Murlidharan (1984) examined a relationship of anthropometrics and physical performance variables with performance in long jump. The finding indicated that the anthropometrics and physical performance variables were very reliable for predicting performance in long jump, i.e. leg length, height, standing broad jump, 50 yard dash, shuttle run (10X4 meter) sit and reach test and vertical jump. These were the most significant independent variables as correlated with performance in running long jump.

Khamdram (1984) conducted a study to determine the relationship of selected physical variables with performance in shot put. The variables used for study were strength, agility, speed and flexibility and anthropometrics measurements included were weight, height, arm length, leg length, fore leg length, thigh girth, Ponderal Index and Crural index. The findings of the study revealed that there was significant correlation between the arm strength and shot put performance ($r=0.45$), leg strength $v/s$ shot put performance ($r=0.42$), flexibility $v/s$ put performance ($r=0.47$), speed $v/s$ shot put performance ($r=0.42$)

The following conclusion were drawn:

(a) There was significant correlation between arm strength, leg strength, speed, and flexibility $v/s$ shot put performance.

(b) There was non – significant correlation with anthropometrics measurements.
Siridhar (1984) conducted a study on 30 college volleyball players to determine the relationship between agility, flexibility, muscular endurance and playing ability in volleyball. The tests conducted were the Sargent jump, side step, trunk flexion, pull ups, sit ups and one minute lateral jumps. The findings showed that motor fitness components of power, muscular endurance, cardio-respiratory endurance as well as flexibility contributed to the game of volleyball. The study also showed the significant relationship between power and performance.

Kela (1984) undertook a study to find out the relationship between speed of movement (Nelson Method), agility (shuttle run) and spine and shoulder flexibility (flex meter) to performance in gymnastics on twenty-five inter university women gymnasts. Rank - difference method of correlation was used in order to find out the relationship. It was concluded that -

1) Agility had a significant relationship with performance in gymnastics.

2) Speed of movement and shoulder and spine flexibility did not contribute to performance in gymnastics.

Sinha’s (1984) investigated the relationship of selected motor traits and anthropometrics variables with performance in AAHPER Basketball Skill Test. The finding of the Study indicated that performance in AAHPER Basketball Skill test was significantly related to agility, cardiovascular endurance, explosive strength, height and Crural Index, whereas it was not significantly related to speed, grip, strength, back flexibility, weight and Ponderal Index. The finding indicates.

1) Explosive power, agility and cardio-vascular endurance are the Key motor traits that underlie performance of skills in basketball.
(2) Height as well as the relative leg length is the main anthropometries characteristics, which contributes to skill in basketball.

(3) The motor traits of speed, grip, strength and flexibility were not the prime factors for performance of skills in basketball.

(4) Excess body weight had restricting effect on basketball performance

Smith and Mansfield (1984) conducted a study to determine the previously developed body composition prediction equation were valid for use with university football team. The subject were football players and their mean age were 19.7 years. Holium Dilution and 26 selected anthropometrics measures assessed them for body density under water weighting residual volume. A predicted body density was obtained by use of two sets of equations developed from the college football players. The differences between predicted and observed body densities were analyzed. It was observed that the seven out of nine models examined which failed to accurately predict the body density for the university football players.

Roy (1985) predicted that the performance in 100 meter sprint was significantly related to selected physical variables namely explosive leg strength and agility and as such these motor abilities might be used in predicting performance in sprints and thus might be treated as factors limiting performance in 100 meters run.

Hassan (1987) did a study on analysis of skills motor abilities and psychological components as predictive factors of basketball playing ability at different levels of achievement. Fifty-four (N= 54) university and fifty-one (N=51) national level players were selected as the subjects of the study. Subjects were tested by AAHPER test. It included basket ball skill test of front shoot, side shoot, foul shoot, under basket shoot, speed
pass, jump and reach test, over arm pass for accuracy and dribble. Motor ability test (power, speed, agility, cardio vascular strength, endurance) were selected to check the players ability of jump and shoot, respond vigorously several times and to run fast to change his path frequently. It was found that with respect of university level players skill variables i.e. push pass of accuracy, under basket shoot and motor components of speed and cardio vascular endurance were significantly correlated to their performance in basketball. Skill variable i.e. dribble, push pass for accuracy and front shoot were found significantly more related to playing ability in case of national level players. Whereas speed pass, over arm pass for accuracy, foul shoot, side shoot and under basket shoot and among motor fitness components, power were found more effectively correlated with playing ability. The remaining components like cardio-vascular endurance, speed, and agility showed significant relationship with playing ability. On the basis of these finding it was suggested that basketball playing ability can be predicted on the basis of combined efforts of skills and motor abilities at any given level. It was also suggested that combined effects of these motor-abilities and skills could be more appropriately utilized instead of using each skill items and motor ability separately for the prediction of basketball playing ability.

Sharma (1987) constructed and standardized specific physical fitness test for badminton players. He used factor analysis technique on the data of 100 inter-college and district level badminton players of North India. As many as seven factors of physical fitness were obtained and five of them were considered as meaningful to select test items from each factor. One-test items having the highest loading on the factor was included in the test battery from each factor. The test items, thus derived, were applied on 500 badminton players to develop the norms and standardize the test items.
Anand (1988) attempted to study the physiological variables inclusive of certain motor abilities through which the performance in basketball could be predicted. The result of the study conducted on 400 inter college and intervarsity level basketball players (200 male and 200 female) selected from different universities of India enabled him to conclude that nine physiological variables namely right hand grip strength, left hand grip strength, leg press, vertical jumping ability, resting heart rate, lung capacity, anaerobic fitness, agility and flexibility were the good predictors of performance in basketball for both male and female players.

Uppal and Datta (1988) studied the motor fitness components as predictors of hockey performance. The purpose of the study was to identity those motor fitness components, which could predict the performance in the game. Seventy- four (n=74) male hockey players from different universities of India served as subject for the study. The motor fitness components included were speed, strength, power, agility, dynamic balance, flexibility and kinesthetic perception. Strait Field Hockey Rating Scale served as criterion measure to evaluate the hockey playing ability. The study concluded that motor fitness components mainly speed, grip strength (both right and left), agility, balance, kinesthetic perception contributed to hockey playing ability. Whereas power and flexibility were not significant contribute to hockey performance.

Bala (1989) has reported leg power (explosive strength) to be one of the main factors responsible for playing ability of basketball players.

Rawat (1989) studied to determine the physical, physiological and motor skill variables of men volleyball players, which could best contribute in the playing ability of volleyball players. He found that among physical variables explosive power, agility and ankle flexibility were main contributors to volleyball playing ability and cardio vascular
endurance, lean body weight and pulse pressure among physiological variables were the best contributors to volleyball playing ability.

Sharma (1989) administered a study on 75 female basketball players from various universities for testing the players, in different basketball skill tests i.e. passing, dribbling, shooting, jump and reach test and motor ability test viz, speed, agility, power, cardiovascular endurance were selected. It was concluded that the basketball skill abilities of intervarsity female players were dependent upon the skill and motor-abilities.

Singh Gurdial and Debnath (1989) investigated the contribution of strength variables toward competitive performance in men gymnastics. They reported significant contributions of arm, shoulder, abdominal strength and leg power to competitive performance in men gymnastics. They also reported competitive performance in gymnastics could be predicted with 75% accuracy with strength variables.

Uppal and Gill (1989) conducted a study on 80 male gymnasts ranging in age from 18 to 33 years. Who were belongs to different states of India. The data were collected in the 27th National Gymnastics Championship held at Jabalpur. Each subject was administered on four strength test i.e. arm strength, abdominal strength, grip strength and explosive strength of leg. The relationship of strength to performance in gymnastics was established by computing Pearson’s Product Moment Coefficient of Correlation. The strength variables were significantly related to performance in gymnastics. Hence, it is possible to predict gymnastic performance on the basis of strength variables. The combined effect of strength variables can be most profitably utilized.

Singh Gurdial (1990) studied the psycho-physical characteristics of the Indian male gymnasts. He reported that leg strength, leg power, arm and shoulder girdle strength, concentration, Sports competition
anxiety and some of the personality characteristic had significant correlation with competitive performance in gymnastics. He further reported that Indian top level performers were better than the mediocre and low level performance in leg strength, grip strength, arm and shoulder strength.

Uppal and Lakew (1990) did a pilot study on school level athletes and the purpose of the study was to develop equations, which may be used for identification of talented students. The students were taken from Schindia School fort, Gwalior, studying in ninth, tenth and eleventh classes. Subject’s age ranged between 14 to 18 years. Hundred (100) meters run, they performed eight hundred (800) meter run tests. Subject were classified into four groups based on their performance i.e. sprinter, middle distance runner, jumper and thrower. Twenty-five subjects were randomly selected from the four groups. Their average age was 16 years. Different motor fitness test were tested on the subjects i.e. speed, strength, endurance, agility and flexibility. Pearson’s Products Moment Coefficient of Correlation, Multiple Correlation and Regression equation analysis were applied for analysis. The multiple regression analysis was performed to develop equation for prediction of performance based on motor fitness components.

Uppal (1990) investigated that the explosive strength measured by standing broad jump contributes in predicting the performance in 100m run, 800m run, long jump and shot put.

Nandi (1990) investigated motor fitness as a prediction factors in the performance of high jump. Thirty (N= 30) boys of a middle school of Delhi were used as subjects of the study. Date pertaining to the selected physical fitness components i.e. speed, agility, flexibility, strength and power were collected by administering suitable tests. The findings of the study revealed that there was significant relationship of high jump performance with power, flexibility and strength.
Hasrani (1991) conducted a study on 25 male basketball players of professional college of Physical Education Gwalior. The subjects have represented the college basketball team and were still doing practice daily. Physical fitness components like speed, power, cardio-vascular endurance and agility were selected to study their relationship to performance. He reported that a physical fitness variable especially agility contributes to the performance in basketball to a much greater extent. Cardio-vascular endurance and power were also affected game performance. However speed variables did not affect the performance in basketball.

Kanwal Jeet et al., (1991) in their study of prediction of physical fitness on the basis of cognitive style, an important aspect of personality. For the purpose of study a sample (N=60) consisting of male and female sports participants and non-participants were taken. The participant's level of participation ranged between inter-university and national. Different cognitive styles were studied through their 'locus of control', 'personal causation', 'self-efficacy' and 'engagement style' by employing standardized test batteries. Physical fitness was measured with the help of AAHPER test. The data were analyzed with help of step-wise multiple regression equation. The value of F-ratio showed that engagement style (4.88), personal causation (3.33), self-efficacy (2.87) and influence of powerful others (2.86) were having significant contribution at 0.5 level in predicting physical fitness.

Kumar (1992) conducted a study of motor fitness components as limiting factors in handball performance. Indian male (N=85) handball players were taken as the subject of the study. The age ranged between 20 to 30 years. Five motor fitness components were selected as the predictor through wherry Doolittle test selection method. The selected predictors were arm strength, back strength, spine flexibility, standing broad, and 50-meter sprint. Further in order to examine relationship
between selected motor fitness components and handball performance, data were analyzed through Pearson’s Product Moment Coefficient of Correlation, partial correlation of Ist, IInd, IIIrd and IVth order, the regression equation was finally made through Wherry – Doolittle test selection method. The result of the study reveals that prediction equation of \[ X_c = 3.419X_3 + 0.265X_6 - 0.141X_{16} - 0.185X_{12} + 2.565X_{14} + 0.693 \]
may be considered as valid predictor of performance in handball.

Chandel (1993) conducted a comparative study on physical fitness, physiological and anthropometrics variables between the tribal and the non-tribal. 260 tribal and 220 non-tribal students were selected to act as subjects of the study. AAPHER Youth Fitness Test Battery consisting of six test items i.e. sit ups, Standing broad jump, 50 Yard dash, Shuttle run, 600-Yard run/walk were used to measure physical fitness of the subjects. Selected physiological parameters such as pulse rate, blood pressure, and hemoglobin were measured and some anthropometrics measurements were also took. The following conclusions were drawn:

1. A significant differences in mean score of anthropometrics variables was found in favors of the tribal. They were found heavier in weight, better in height, possessing broader shoulder, wider chest cavity, bigger hip, high and calf circumferences.

2. The tribal were found superior in all aspect on physical fitness variables as significant mean difference was found in their favour in sit ups, standing broad jump, shuttle run, 50 yard dash, 600 – yard run/walk. Hence, it could be safely concluded that the tribal were superior in speed, agility, and endurance then their counterparts.

3. The tribal were superior to non-tribal in physical fitness, cardiovascular endurance and anthropometrics measurements.
Kumari (1993) investigated motor abilities as predictor of performance of hockey players. The sample of the study was 100 boys and 100 girls through 307 boys and 307 girls representing various states and union territories of India were chosen through purposive sampling method. Ten motor ability tests were used for measuring the motor abilities and ten-hockey skill test to measure the hockey skill performance, whereas game performance was evaluated through rating by six expert coaches. After analyzing the data. She made the following conclusion.

(1) Three motor ability measures namely forward bend and reach, standing broad jump and standing shot put were significantly and positively related to some of the skill measures in male.

(2) In females the relationship of all the motor ability measures with the skill were significantly related.

(3) Motor ability that most efficiently predicts total skill performance in male was explosive strength of arm and shoulder griddle, active flexibility of hips and trunk, agility and co-ordination of body muscles and strength endurance of abdominal muscles. In female these includes explosive strength of arm and shoulder griddle, speed endurance, agility and co-ordination of body muscles and explosive strength of leg extensor muscles. Two of the abilities namely explosive strength of arm and shoulder griddle and agility and co-ordination of body muscles were common in both males and females.

(4) None of the Motor ability measures significantly related to game performance in males. In female however three of these namely, standing shot put, 40 meters sprint and 800m run were significantly related with game performance.
Joyner, Albert and Barry (1993) studied the differences in golf playing ability of college male and to predict golf ability based on performance on a battery of golf skills test subjects in the study were 61 college males who were placed in an advanced, intermediate, or novice ability group based on their average golf scores. The Golf Skill Test Battery consisted of a drive, middle distance, pitch, and chip and put test.

Descriptive discriminate analysis was used to identify group differences. There analysis was reformed and the results were similar for each analysis. The most important variables to separating the groups were the drive followed by the pitch and put. The combination of the drive, pitch and put separated the group.

As well as original five variables combinations the underlying structure separating the groups consisted of the drive, pitch and putt and was labeled on overall golf factors.

Predictive discriminating analysis was used to classify the subject into the group that they most closely resemble. For the advanced groups, the classification rate was 85%. The most important test for classifying subjects into the intermediate group in was the pitch test. The drive and pitch test classified intermediate subjects with some accuracy as all five tests. The classification rate for the novice group was 90%. For the novice group the chip, pitch and middle tests were similar in importance for two test combinations classified novice subjects with 100% accuracy.

The major conclusion of the study was (1) The difference in golf ability is well explained by the drive, pitch and put test and (2) for classification.

Raman (1993) conducted test on 30 male cricket players from graduate and undergraduate courses at Lakshmibai National College of Physical Education, Gwalior in order to determine the relationship of grip
strength, leg power, agility and hand and foot reaction time to performance in cricket. Data was collected on grip strength (grip dynamometer), leg power (standing broad jump), agility (40 yard shuttle run), Hand and foot reaction time (electronic reaction timer) and performance was average of subjective rating of three experts during practice and match situations. Pearson Product Moment Correlation was employed to statistically treat and data. It was concluded that:

1. Hand and foot reactions time is the most important variables in the prediction of cricket playing ability.

2. Leg power was another important variables in the prediction of performance in cricket.

3. Grip strength was also as important variable of prediction in cricket playing ability

4. Agility was not an important factor in the prediction of performance in cricket.

Sangral (1994) studied on thirty nine (N=39) students in 10-Ball Shooting, Rolling for 20-M and Dribble and Roll for 20 sec tests as criterion measures for hockey and motor fitness components were: co-coordinative ability, standing broad jump, 50-M fly start, vertical jump, 6-10 m shuttle run, sitting ball throw, 800 m run and backward run for 20 sec. The analysis of data shows that 10-balls shooting has significant relationship with co-coordinative ability and backward run for 20m. Similarly, rolling for 20m had significant relationship with standing broad jump, 30m fly start, 6X10 m shuttle run, ball throw, 800m run and backward run for 20m and Dribble and roll for 20 second (distance) has significant relationship with coordinative ability, 30 m fly start, 6x10m shuttle run, 800m run and backward run for 20 m. The regression equation for prediction shows differing contributions of motor abilities to performance.
Kennedy et al. (1994) attempted a study to find out the relationship between fitness components and motor skill in first grade children's. Fifty childrens (N=50) were selected as the sample of study. The purpose of the study was to determine how the fitness components were related to motor performance skills according to Bruininks Oseretsy Test. All recorded values of the fitness component were compared to standardized motor skills score. It was found that run performance was negatively significant with body weight but independent of skin fold sums, ½ mile run and pacer tests. Comparison of fitness parameters and motor skill indicated significant correlation with ½ mile and pacer fitness test. The result showed that 1/2-mile run was negatively correlated with balance bilateral, co-ordination and strength, whereas pacer test was positively correlated only with the strength and motor skill variable. These results indicated that in relatively homogenous populations continuous walk, jog movement (1/2 mile run), increased body size, improved balance, bilateral co-ordination and strength, viz., negatively effected run performance. In contrast more interval related activities increased strength levels in kindergarten and first grade children's.

Sagger (1994) studied the skill tests and tactics of volleyball and provided a detailed descriptive knowledge of different skills and tactics required for successful participation in the game of volleyball during competitive play.

Toor (1996) conducted a study to investigate physical, physiological and anthropometrics determinants of performance in male inter college level sprinters, jumpers and throwers. The data was collected on 105 sprinters, 100 jumpers and 100 throwers. Ten physical, ten physiological and twenty anthropometrics measurements were taken.

Pearson's Product Moment Coefficient Correlation was used to analyze the data to assess the relationship of performance of sprinters, jumpers and throwers with physical, physiological and anthropometrics
variables. Multiple step wise regression was applied to assess the combined contribution of physical, physiological and anthropometries variables with performance. In order to Assess the limited factors for top performance, the regression equation was worked out. On the basis of the study he found that:

1. The sprinters performance was significantly related to physical variables namely sit ups, Sargent jump, standing broad jump, back lift and 50 yard dash, physiological variables namely recline pulse and sitting pulse rate and anthropometrics variables namely age and calf circumference.

2. The performance of jumpers was found significantly related to physical variables i.e. sit ups, Sargent jump and standing broad jump, anthropometrics variables namely age and biceps skin fold.

3. The performance of throwers was found significantly related to chest normal chest expended variable, elbow width, shoulder width, chest width, knee width hip width and weight variables.

Bracko and Fellingham (1997) conducted a study on prediction of ice skating performance, with off ice testing in youth hockey players. The purpose of the study was to identify the off ice-variables that were associated with high performance skating acceleration, speed, full speed and agility. Thirty male (N=30) players age ranged between 10 to 14 year were selected as the subjects. Subjects continued their practice in ice from one to three times in a week for three weeks. Different measurements and tests were taken to check the ice skating performance. Measurements taken were those of weight, fat percentage and tests were sit and reach test, hip abduction, flexibility, vertical jump, standing long jump for distance, vertical jump, average and peak mechanical power, sit ups and push ups for one minute. The results indicated that vertical jump, push-ups and average mechanical vertical
jump, power were reasonable predictors of skating acceleration speed and full speed in youth ice hockey players. The results suggested that consideration of these off-ice variables might be important in training of youth ice hockey players.

Duey et. al. (1997) conducted a study with purpose of developing the prediction of VO\textsubscript{2} max in youth soccer players. Highly trained players performed 20 meter shuttle run and laboratory treadmill evaluation. Correlation between directly measured VO\textsubscript{2} max and values were predicted by the many equations. It was also concluded that the 20-meter shuttle run is a valid predictor of VO\textsubscript{2} max.

Kaur (1999) investigated motor abilities as a predictor in the performance of secondary school female volleyball players. Two hundred forty (N=240) female volleyball players of various secondary schools of Punjab were used as subjects of the study. The sample includes only those players who participated in district and inter-district as well as in open tournaments. The age range was from 14 to 19 years. She administered eleven tests of motor ability for evaluating the motor fitness level of the player and to judge the performance of player in volleyball game, five-skill test were used. Analysis of data revealed significant relationship of volleyball performance to each of the following motor ability components i.e. standing broad jump ($r=0.26$), vertical jump ($r=0.28$), push up ($r=0.39$), right hand grip strength ($r=0.27$), left hand grip strength ($r=0.26$) sit ups ($r=0.45$), 40 meter sprint ($r = -0.34$), 10x4 meter, shuttle run ($r = -0.013$), forward bend reach ($r=0.26$). However, the remaining motor ability components was not found to be significantly related at 0.05 level of confidence.

To predict the performance of female volleyball players the prediction equation were made i.e.

\[
Y = 0.3224X_8 - 1.3957X_9 + 0.1707X_6 + 0.2438X_4 + 0.1536X_{11} - 1.3532X_2 + 44.9797
\]
Hare (2000) Given the complexity of basket ball, it is understandable that a degree of skepticism exists as to the relevance of talent identification and for selection, but this assumption is largely untested and therefore the study entitled “predicting success in junior elite basketball players. The contribution of anthropometrics and physiological attributes have undertaken” His study explored that anthropometrics and physiological profiling can contribute to selection procedure in junior basketball at elite senior level.

Mozumdar Indu and M.Edwin (2000) conducted a study on 180 male basketball players in Mini, Youth and Junior Category of Bombay region for finding the relationship of selected physical fitness variables to playing ability in Basketball at different levels of performance they took four variables namely:

1. Vertical jump (Sargent Jump) for leg power
2. Thirty meter dash for running speed
3. Agility run
4. Cooper’s 12 minutes run/ walk

Above mentioned tests were used on the players to assessed their physical fitness level and Basketball playing ability was graded (out of ten points) by a panel of three qualified judges during the competition and the average of three grades were considered as the subject playing ability. The relationship of physical fitness variables and playing ability was established by computed Pearson’s Product Movement Coefficient of Correlation and comparisons of Mini, Youth and Junior playing ability, was done by using the ‘t’ test the finding indicates.

(i) There was a positive relationship between 30m dash and under basket shooting for the junior group
(ii) Relationship between other than 30m dash physical fitness variables and basketball playing ability for the three groups were not significant.

(iii) The mini group has a significantly higher relationship between playing ability and 30 m dash than the youth group.

(iv) There are no differences among the three groups i.e. mini, youth and junior as far as the relationship between physical fitness variables and basketball playing ability variables were considered except for the above-mentioned differences.

Kaur, et.al. (2001) In their study measured the anthropometries variables on of 17 boys junior basketball players ball players attending national camp for preparation of an international championship. It was important to observe that out of 17 players, only 6 have fallen in the required Olympic Somatotype circle. On the whole it was observed that Indian were still smaller in height and lighter in their body mass and required somatotype development to be required for successful basketball players. They also mentioned that certain anthropometries values which could be able to predict the excellence in junior elite basketball players.

Singh (2003) conducted a study to investigate anthropometries; motor fitness and motor skill determinants of performance in inter college level handball players. The data were collected on 108 players from nine teams through purposive sampling technique. Seventeen anthropometries, eleven motor fitness and six motor skill test were taken for study and over all playing ability of the male handball players was measured by the panel of three expert judges during inter-college competition on five point scale. Pearson's Product Moment Coefficient of Correlation (r) statistical technique were used to analyze the data to assess the relationship of handball players to each of these anthropometries, motor fitness and motor skill variables. Multiple and
step-wise regression was applied to assess the combined contribution of
anthropometrics, motor fitness and motor skill variables with
performance. In order to assess the limited factors for top performance
the regression equation was worked out. On the basis of study he found
that.

(i) Anthropometrics variables height, calf circumference, supra iliac
skin fold, thigh skin fold, Bicep skin fold, triceps skin fold were
found significantly related to the performance of male handball
players. The equation can be as under:
\[ Y = -4.22 + 0.36X_3 + 100X_{11} + 0.46X_{13} - 0.94X_{17} - 0.218X_{18} \]

(ii) Motor fitness variables namely speed, agility, power of arm, power
of legs, cardiovascular endurance and left hand- grip strength were
found to be significantly related to the performance of the male
handball players. The equation came to be as under:
\[ Y = 1.77 - 0.117X_{19} - 0.331X_{21} + 0.051X_{25} + 100X_{26} + 0.33X_{31} \]

(iii) Motor Skill variables namely dribbling, passing, non- dominate
hand throwing ability, throwing accuracy and defensive movement
were found significantly related to the performance of male
handball players the final equation came to be as under:
\[ Y = -0.310 + 0.42X_{30} + 0.050X_{31} + 0.054X_{32} + 0.16X_{34} - 0.169X_{35} \]

(iv) 30m sprint, shuttle run, Sargent jump, 12min run and walk, handball throw and defensive movements tests belongs to
anthropometrics, motor fitness and motor skill variables were
found significantly related to the performance of male handball
players. The following regression for combined contribution of
anthropometrics, motor fitness and motor skill variables were
came out to be as.
\[ Y = 2.57 - 0.112X_{20} - 0.285X_{21} + 0.041X_{25} + 0.001X_{26} + 0.030X_{31} - 0.083X_{35} \]
Sethi, Parmod Kumar (2004) investigated physical fitness component as a predictors in the performance of male weightlifter. The subjects of the study were one hundred male weightlifters studying in different universities of India and who had participated in the All India inter-universities weightlifting championship in 2002. He studied seven physical fitness component i.e. speed, strength, cardiovascular endurance, static balance, agility, power, flexibility which were measured by test items i.e. backfull squat test, military press test, sit-ups stick drop test, 50 yard run test, Harvard step test, stork stand test, squat thrust test, standing broad jump, shoulder rotation test and forward bend and reach test respectively. The criterion measure was performance in weight lifting skill performance in snatch and clean and jerk during the championship.

The data were analyzed using the Pearson’s Product Moment Coefficient of Correlation(r) for reassessing the relationship of weightlifting performance to each of the physical fitness components and Regression equation for predicting the weight lifting performance from fitness components. On the basis of the study he found that:

1. The physical fitness components namely speed, maximum strength, explosive strength, strength endurance, agility, power were significantly related to snatch in weight lifting.

2. Among physical fitness component maximum strength, explosive strength, endurance, agility powers were significantly related to clear and jerk.

3. Trunk and shoulder flexibility speed (acceleration ability) cardiovascular endurance and static balances was not found to be significantly related to snatch.

4. The relationship of trunk and shoulder flexibility, speed (acceleration and speed of movement) cardiovascular, static balance to clean and jerk respectively was partial led out.