Chapter-2

Review of Related Literature

A careful review and exploration of the related literature was indispensable to provide ideas, theories, explanation or hypothesis valuable in formulating the problem, to avoid the risk of duplicating the same study already undertaken, to suggest methods of research appropriate to the problem, to locate comparative data useful in the interpretation of results and to contribute to the general scholarship of the investigator. The current chapter was designed to bring light on a few related empirical studies which are relevant to the problem under study.
Motor Fitness Components

Saravanan and Singh (2013) attempted to analyse the diurnal variation on selected motor fitness components among sprinters, jumpers and throwers. To obtain the purpose of the study a total of thirty (N=30) male athletes, age ranging from 18-22 years were selected from the colleges affiliated to UP Technical University, Lucknow. Through both the critical and allied literature, pertaining to the problem, the following variables were randomly selected, the variables were as follow: speed and strength endurance. The duration for the data collection were followed as 06:00, 09:00, 12:00, 15:00 and 18:00 hours. It has been concluded that diurnal variation has a greater effect on the speed and strength endurance. Both the variables have been greaterly affected by diurnal variation.

Brechue et al. (2010) examined velocity, acceleration and sprinting strategy patterns in college Football players. A total of sixty one Football players were randomly selected as subjects for the study. After each and every sprint, acceleration and velocity were determined, one repetition max. (1-RM), Jerk, Power clean, standing long jump, standing triple jump and vertical jump is used to identify the power and lower-body strength. A significant difference was found among the lower-body strength acceleration, velocity, and sprint performance but it takes place only in the presence of corrected body mass. The body mass of the lineman is found to be lower in comparison with linebackers and backs, the patterns for the velocity and acceleration were found same for every group. At 9.1 and 18.3m magnitude of acceleration and velocity found the difference in sprints time. For increasing a rapid speed, acceleration and a high velocity was maintained throughout the sprint. This method was used to determine the Sprint performance in Football players.

Jonatan et al. (2010) carried out the study to examine individual variations in health and exercise related phenotypes. To analyse the variation −174 G/C polymorphism of the IL6 were used. 174 G/C genotypic and allelic frequencies in different three male groups of the same Caucasian (Spanish) were compared following numbers of selected endurance athletes (n = 100: runners, cyclists), elite power athletes (n = 53: throwers, jumpers and sprinters) and (n = 100: non-athlete). The power athletes group was also found to be superior in the frequency of the GG genotype and G allele in comparison to the endurance athletes. GG genotype model was found to be the better in comparison to the model used on endurance
athlete and control group. An insignificant difference was found between the endurance athletes and control groups.

Lena et al. (2010) observed that (MPA) motor performance ability has been viewed as a multidimensional tool involving such specific components as strength, endurance, flexibility and coordination. This model was tested in the year 2003 and 2006 in a city of Germany, on the participants' age 6-17 yr old with grand total of 2,840. The new test battery focused on the different motor dimensions of strength, endurance, coordination under precision demands, coordination under time pressure and flexibility. Factor analysis was employed on the data collected. Significant effect was seen in each of the examined factors and this is essential in care of health.

Lidior and Zjy (2010) reviewed studies of female Volleyball players on physiological attributes, physical attributes and on-court performances. While planning the annual training program of the Volleyball players, the different terms should be kept in mind through the literature, such as fat-free mass, body mass, strength, aerobic profile speed and agility. After searching lots of literature, the researchers came to know that Volleyball players with higher skills are heavier, taller and having good vertical jump ability in comparison to the lower level, also an interesting finding was seen in the literature that the aerobic profile of the Volleyball and Basketball players were very much close to each other. It was also found that the vertical jump in Volleyball increased due to the ballistic resistance training, early season conditioning is proposed to prevent and reduce fatigue. Coaches can implements the strength and conditioning training programme by following suggestions, i.e. while planning mentioned programs functional and non-functional, exceed your limit cautiously, also ballistic training is important for the Volleyball training programs.

Milanese (2010) determined the motor abilities and anthropometric parameters in children. Total one hundred fifty two (N=152) participants, age ranging from 6-12 yrs, were examined on the basis of anthropometrical and motor fitness test. The test included for the study was waist circumference, BMI, sum of five skin-folds, waist-to-hip ratio, 30m dash and standing long jump. Spearman correlation coefficient statistical technique and ANOVA was used to analyse the data. Waist circumference and subcutaneous fat are positively correlated with BMI and negatively correlated with body density. BMI doesn't affect significantly the motor fitness whereas some of skin folds do not directly correlate with velocity in males , age ranging from 6-7 yrs.
and with jump length in females aged 8-12 years. Males performance was found to be higher in the motor fitness in relation to the age, further especially in females, all the motor fitness tests were correlated with each other.

Marques et al. (2009) “investigated the Volleyball players to examine the variation as per playing position on the basis of strength and anthropometric characteristics. A total of thirty five (N=35) Volleyball players (male) participants were taken under study. All the participants were divided as per the different position i.e. opposite and outside hitters, middle blockers, liberos, and setters (n = 6, n = 10, n = 9, n = 4, n = 6). Body mass, height, muscular strength and muscular power (countermovement jump) were measured. Results indicate that players of different position significantly differ. Opposite hitters and middle blockers were found to be heavier and tallest players. Liberos were found lighter than others. Further, middle blockers and opposite players, setters and liberos were also significantly differs on the basis of fitness components”.

Ooi et al. (2009) compared the Malaysian male Badminton players with sub-elite players to determine whether physiological and physical variables distinguish in sub-elite players from elite players. Total (N=24) Malaysian male Badminton players were selected as subjects for the study. With a gap of one day tests of anthropometry, anaerobic recovery capacity, explosive power, specific agility, aerobic capacity and strength were carried out. Results indicate that better maximum absolute strength was found in elite players than compared to sub-elite players.

Baker and Newton (2008) compared the national Rugby League players with the state league players. Total forty (N=40) Rugby players were selected as subjects for the study. The athletes were compared on the variables power, lower body strength, maximal speed, acceleration, sprint momentum and agility. Power and strength were the best comparable factors in the NRL or SRL squads, no test has been found significant in between the NRL or SRL squads. Further body mass and ten meter velocity test was better for comparing the NRL and SRL players. Players who were faster had superior forward drive and they were able to repel their opponents. Results of the investigation indicate that considerations to be given towards escalating the strength of lower body, power and body mass.

Beth (2008) observed that motor competence (LMC) children are not able to participate in many recreational activities and sports naturally enjoyed by their high motor competence (HMC) peers. In the present investigation a total of 19 subjects,
age ranging from 5-7 yrs compared with low motor competence and 19 children with high motor competence (HMC) were selected for the study. A poor fitness outcome has been reported in these children. To collect the data from the subjects the researcher examined each group (once a year for five years) on the basis of six fitness components i.e. body composition, cardiovascular endurance, sprint run, standing broad jump and balance. Results indicate that except body composition the performances of the two groups were found significantly differs for all components of fitness.

Marja et al. (2008) compared the low motor competence individuals with high competence individuals who have participated in motor fitness and health assessments. To conduct the study total 149 participants “adolescents and adults” were selected as subjects for the study. According to the basic physiological health parameters, an individual with low competence did not differ but high motor competence adolescents and adults have better optimal levels of overall health and fitness indices than low competence adolescents and adults. In the low motor competence group musculoskeletal fitness was significantly compromised in functions of age. Results indicate that high motor competence group significantly differed from low motor competence group. The body mass index (BMI), static balance and motor skills were significant predictors. The results of the study reveal that individuals with low motor capability have compromised with health status.

Marques et al. (2008) recommended that well-designed training programme can improve the performance of Volleyball players. The present study was conducted to examine whether physical performance of professional female Volleyball players can be improved after in-season muscular strength and power training. One more practice session was conducted for 10 elite female Volleyball players, apart from normal practice sessions. The practice sessions were incorporated both Plyometric exercises and resistance training. All the sessions were randomly allotted to the subjects. In the practical session maximum bench press (4 repetitions), parallel squat medicine ball throw (overhead), with and without load countermovement jumps were asked to perform prior and later than the twelve week training program. Results indicate that the Strength of the Volleyball players was improved by 15%. In the case of bench press and parallel squat, 11.5% enhancement was observed.

Suncica (2008) studied the impact of motor abilities on the performance of jumping, leaping running and rolling (some fundamental movement skills). To obtain
the purpose of the study, total of fifty eight (N=58) seven year-old girls and boys were selected as subjects. The subjects were investigated during and after basic gymnastic treatment. Results indicate that for the group of boys significant adequate metric characteristics (sensitivity and objectivity) for rolling, jumping and running (during and after treatment) were observed. For the group of girls significant differences were observed in case of jumping and running (after treatment). Some of the dimension for both the genders boys and girls were brought out by using a factorial analysis of nine motor variables.

Barnes et al. (2007) conducted a study to investigate the performance diversity on the vertical and horizontal force during a transform of direction task between I, II, and III National Collegiate Athletic Association Division (NCAAD) players. A total of 29 college level female Volleyball players were selected as subjects to conclude the study. Further, the subjects were divided in three groups as: I (n = 9), II (n = 11), and III (n = 9). To obtain the data a novel agility test, isometric leg extensor test and countermovement (CM) and drop jump were selected as a tool for the study. The obtained data was analyzed by applying One-way analysis of variance (ANOVA) and results reveals that in relation to countermovement jump heights division one athletes was found to be significantly higher than another division.

Dale et al. (2007) evaluated the group of West Australian male paramedics on the basis of physical characteristics. The collection of data was take place from 29 subjects. Further, the subjects were divided into two categories, conventional (CO) (n=18) and special operations (SO) (n=11). The subjects were evaluated on various variables i.e Aerobic capacity, flexibility, muscular endurance, body composition, power and agility. To measure the mentioned variable series of fitness test i.e multistage shuttle run test, sit & reach test, sit-ups, chin-up in sixty seconds, skin folds, vertical jump height and Bangsbo agility test were used as an instrument. Results indicated that SO are found to be more significantly differ from CO whereas fatigue index score (Bangsbo test) were significantly lower for SO than for CO.

Gabbett and Georgieff (2007) compared the novice, semi-elite and elite level junior male and female Volleyball players on the basis of anthropometric and physiological characteristics. A total of (N=153) junior national, state level and novice male and female Volleyball players were acted as participants to conclude present investigation. Out of one hundred fifty three players, sixteen males and forty
two were elite female players, the no. of novice was 27 males and 34 females, the no. of sub elite player was 10 males and 14 females. The anthropometry and fitness measurements i.e (standing height, body mass, Lower and upper-body muscular power, agility, speed and estimated maximal aerobic power) during the competitive phase of the season, after obtaining a degree of match fitness were undertaken to conclude the study. Results show that junior national, state and novice Volleyball players significantly differ on the variables standing height, muscular power (lower-body), skin fold thickness, aerobic power (max.) and agility. The findings suggest that anthropometric & physiological quality of Volleyball players also helps to getting better playing level.

Gorostiaga et al. (2006) carried a study to observe the effects of complete season of play on throwing velocity and physical fitness of Handball players. To find out the effects of the study fifteen elite (N=15) male Handball players were examined. To observe the effects of play on physical fitness the maximum bench press (1RM), throwing velocity, and jumping explosive strength were assessed on four times during a forty five week season. Competition and training were computed for eleven different activities as per to the volumes and intensities of individual training and competition programmes. Results indicate that no significant changes were observed on endurance running and explosive strength-related variables. Further the findings also recommended that changes in standing, throwing velocity and strength training time significantly correlated.

Gabbett (2005) conducted a study on junior Rugby League players (with specific playing positions) to compare their anthropometric and physiological characteristics. A total of 240 junior Rugby League players have gone through the standard anthropometric measurements. Further all players were divided into three categories i.e props, halfback and outside back positional groups. Results indicates that props were found (taller, heavier and had greater skin fold thickness) than all other positions. The props were also found faster than the halfbacks and centre positions over 40 m. Significant better estimated maximal aerobic power observed in halfbacks than props. The analyzed data shows that the props positional group had significant difference on agility, speed, aerobic power (max.) than the hookers and backs positional groups. Insignificant difference was found among anthropometric and physiological characteristics of other positional groups.
Young et al. (2005) compared the physiological and anthropometric measures between starters (players selected) to play and non-starter (players not selected) in the Australian Football League (AFL). A total of 34 players were tested to conclude the study. To collect the data from the subjects, the variables were taken under study were: strength and power of leg extensor muscle, strength of upper body muscles, strength of hamstrings and quadriceps muscles, speed, (VJ), endurance, skin folds and flexibility of hamstring muscles. The group having more experience is better in comparison to another group on the variable of speed and leg power. An in-significant difference was found in strength of lower and upper body, VJ and expected VO₂ max. On the basis of results of the study researchers concluded that starters and non-starters were having some different fitness quality AFL club.

Meir et al. (2001) investigated (N=146) professional Rugby League players. All the players were attached with teams who were competing in England and Australia. Players performed a total series of physical fitness performance tests i.e squat, sprint and bench press, 5-minute run for distance, agility run and 30-second plyometric push-up. The obtained data was analysed by applying one way (ANOVA) at 0.05 level of confidence. Results indicate that significant differences on numbers of variables were found in all three categories. By generalizing the results the conclusion could be made that players can be grouped on the basis of fitness, training or positioning (forwards or backs).

Zajac et al. (2000) observed that in literature lots of work has been done over the black and white people in West African origin and white Americans. Blacks have narrower hips, less body fat, longer legs, thicker thighs and lighter calves. Some of the anthropometric characteristics permit for more competence in jumping and running as per biomechanical perspective. Explosive strength and speed are of greatest importance in the consideration of motor abilities Basketball disciplines. The study was aimed to compare the elite white and black in Basketball players of the Polish Basketball League on the basis of special sport skills and general motor abilities, anthropometric measurements and indicators of aerobic and anaerobic power. Twenty Basketball players of the Polish first division league were selected as subjects for the study. Further, subjects were divided into two categories white European athletes (n=11) and black American athletes (n=12). During the competitive period, players were measured and several anthropometric measurements were taken. Speed, agility, upper and lower limb strength were evaluated through various field tests. Two
basketballs were also used to analyse sport skills. Significant differences were noted between the samples.

Amusa and Onyewadume (1987) conducted a study on eighteen male swimmers of the University of Ibadon who were competition bound and trained for three months in readiness for the Nigerian University Games. The subjects were measured on body composition, cardio-respiratory endurance, heart rate, oxygen consumption, vital capacity, muscular strength, leg power, joint flexibility, agility and leg speed with a view to describing their profile. The findings of the study corroborated well with the suggestion of the international committee for the standardization of physical fitness test (1974) that strength; endurance body type, flexibility, speed and agility are relatively important human factors in distance and sprint swimming.

Johnson (1978) conducted a study to find out the relationship of speed, balance, muscular strength, standing height, arm length leg length of inter-collegiate wrestlers. The subjects (N=208) for this investigation were collegiate wrestlers with at least two years Inter- University experience who had wrestled in at least 50 per cent of their teams matches during the average or successful according to their win/loss percentage. All subjects were also tested for reaction time, moment time, static elbow flexion and strength. The data was analysed with the help of one way analysis of variance (ANOVA) at 0.05 level of confidence. Dynamic balance, explosive leg strength and reaction were found insignificant in three categories. Better balance has been observed in successful wrestlers than the unsuccessful wrestlers and the leg length of successful wrestlers was shorter than average and unsuccessful wrestlers.

Singh (1978) evaluated the physical fitness of Hockey players. Sixty-seven male’s hockey players were selected randomly from total population of Punjab state, to act as subjects for present study. The subjects were tested in nine different components of physical fitness; extend flexibility, dynamic flexibility, explosive strength, co-ordination, equilibrium and endurance. The data thus collected were statistically analyzed to find out the level of Hockey players in each element of physical fitness. This study showed dominance of explosive strength and respiratory endurance elements of physical fitness among Hockey players.
Personality Traits

Solanki (2013) evaluated the personality differences among twenty athletes who had participated in different track and field events. The subjects were selected at random from 69th All India Inter University Athletics Championship December 2008-09. The researcher used Eysenck’s Maudsley Personality Inventory to collect the data from the subjects. To analyse the data “F” test was used as statistical tools. Insignificant difference was found on the variable neuroticism between sprinter and long distance runner both of them were found aggressive. The finding also shows that throwers were significantly differs from other three groups. Further, same result was found in the category of jumpers. Insignificant differences between the groups were found in case of extroversion. The results of the study reveal that participation in athletics builds character and strengths, necessary qualities needed for competition like socially outgoingness, accept defeat victory and fair play etc.

Katharina et al. (2012) conducted a study on fifty five (N = 55) highly trained Handball players at the (interval of the game) to find out the contribution of situation-relevant traits (i.e., narcissism, public self-consciousness) and situation-irrelevant traits (i.e., private self-consciousness) on the performance of players during high pressure situation. To obtain data personality questionnaires administered during performing a throwing task in low and high-pressure conditions. 1500–2000 spectators consisted of high pressure conditions. Findings supported that to give performance in high-pressure situations narcissism and public self-consciousness were positively associated and private self-consciousness was found to be irrelevant. Results highlight that trait commencement is a talented explanation for the application of personality characteristics to performance under pressure. Insignificant relationship was found in low pressure.

Mark (2012) conducted a study to investigate the effects of big five personality dimensions on personality traits of dissimilar groups of athletes. To obtain the purpose of the study, 253 athletes were selected as subjects. The NEO-FFI and the (CFQ) for sport was used as criterion measures. Findings suggested that emotionally stable, open to new experiences and extroverted athletes noted a largely use of problem-focused coping strategies. The athletes exhibit high levels of extraversion, openness; agreeableness and Conscientious and also noted that athletes largely use the emotion-focused coping strategies. The avoidance coping strategies reportedly used
by athletes who have higher neuroticism or low levels of openness. Study also concluded that higher-level athletes were differs from lower-level athletes. In the same way difference was found between males and females, team and individual sports athletes. The result reveals that this model of personality can help differentiate athletes of different levels and also helps to recognize the coping strategies which will be adopted by the athletes during participation in sports competitions.

Arthur (2011) observed that the academic performance and Personality have been associates with each other. In the present study, the Eysenckian Personality model was organized to assess a specific theoretical model and predicting academic performance. From total population (N = 8,013 to 9,191) 20-23 sample were selected. 7 samples (N= 3,910) were selected on lie scale. Obtained data was analysed by Hunter-Schmidt random effects method. Weighted least squares regression was used to analyse the moderating effect. Result shows that academic performance had relationship with neuroticism that were constant with earlier findings, while Psychoticism appears to be linked to academic performance because of its association with FFM Conscientiousness.

Marina and Sabah (2011) compared the personality characteristics of athletes and non-athlete students of Islamic Azad University of Ahvaz. To obtain the data for study, 200 students were selected as sample of the study. Further, samples were divided into two groups’ medallist and non medallist. Multistage cluster sampling was used for the selection of sample from the community. Demographic data and Personality Characteristics (NEO) were used as a tool for the collection of data. Data were analysed with the help of descriptive statistics and MANOVA. The result showed that athletes and non-athletes significantly differ in ‘F’ value (4.68, 12.59, 1.14, 0.307 and 4.36). They concluded that due to participation in competitive sports activities the difference occurs in athletes and non-athletes.

Chris et al. (2010) stated that for the professional coaches it is very difficult as to make valid and accurate prediction about an athlete’s for long term success in professional sport. Coaches routinely employ a battery of tests to evaluate this process. To date, however, personality inventories are used as these instruments by coaches. The aim of the research was to assess relationship to athletic performance over a fifteen year time and make use of a normative measure of personality. One hundred Canadian League Hockey players were acted as subjects for study. The time periods were 1991-92 to 2005-06 NHL season. The selection model was found
significant predictor of a NHL player’s. It was concluded that personality measures helps the coach to predict performance of players.

Mahin and Mohammad (2010) compared athlete’s personality characteristics in team sports and individual sports. To obtain the purpose of the study 134 athletes were examined. The subjects were further divided into different categories team sports (N=92), individual sports (N=42), males (N=88) and females (N=46). NEO-PI-R and SAS scale was used as a tool of the study. They concluded that athletes of individual sports scored higher score on conscientiousness and autonomy. Team sport athletes scored higher on agreeableness and sociotropy than their opponents. Insignificant difference was found between individual sports and team sports athletes on extraversion, neuroticism and openness. The result shows that the characteristics of individual sports athletes significantly differs from their counterparts.

Sabine et al. (2010) examined the influence of personality on skills of Chess players. Elite male and female Chess players were tested with the help of FPI-R. The inventory provides the norms for males and females. The result shows that the personality profile of elite Chess players insignificantly differs from the general population norms. Higher achievement motivation, satisfaction with life and less physical complaint was found in female players in comparison to female population norms. Personality profile showed different patterns in each categories but it was also related with Chess skill. More introvert traits were found in strong male chess players. The opposite pattern was found in the category of female players. On the basis of these findings the researcher concluded that personality plays significant part to perform complex intellectual activities at higher level.

Merim et al. (2007) assessed the personality profiles of 269 children. From the total sample (N=219) played chess and (N=50) did not play Chess. To measure the subjects, the Big Five model (BFQ-C) was used as a tool of the study. The children who played Chess obtained higher score on intellect/extraversion/ openness and energy. The children who obtained higher score on agreeableness are less likely to be attracted to Chess than boys with lesser scores. The agreeableness trait was found higher in girls; this may be the prime reason of less interest of girls in Chess. None of the Big Five factors was related with self-reported skill level. Significantly higher scores were found on openness in weaker Chess players.
Rhodes and Smith (2006) reviewed the literature on physical activities and major personality traits and provided some findings. Total 33 studies from the period of (1969 to 2006) were reviewed to conclude the present study. Extraversion, neuroticism and conscientiousness were identified as correlated factors of physical activity with the value of ‘r’ (0.23, 0.11 and 0.20). Five-factor model traits and Eysenck's psychoticism trait were not related with physical activity. Relationships of personality and physical activity like age, sex, culture, design and instrumentation were uncertain to a small number of studies. The analysis of data shows that physical activity personality associations are quite invariant to these factors. Many studies recommended differences in mentioned traits but the researchers recommended that further research is needed to find solid conclusions.

Andrew et al. (2005) investigated the influence of exercise on mood changes in all personality types. Positive and negative mood would be associated with extroversion, neuroticism, pre- and post-exercise. To find the result for present study, 90 female exercisers were selected as subjects. The (EPI) once and the BRUMS scale before and after exercise session were chosen as criterion measure. All the participants were divided into four personality types with the help of median split: stable introverts, stable extroverts, neurotic introverts and neurotic extroverts (n = 25, n = 20, n = 26, and n = 19). Multi variance analysis (MANOVA) showed significant mood improvement in all personality types. Negative mood, pre- and post-exercise score were associated with neuroticism. Insignificant affect observed between personality and exercise mood enhancement. They concluded that exercise is associated with improving mood.

Filho et al. (2005) evaluated the personality profile of high level athletes and non athletes of Brazil to verify similarities and differences between them. Two hundred and nine athletes (108 men and 101 women) from four sports modalities (Volleyball, Basketball, Judo, and, Swimming) 214 non-athletes (169 men and 45 women) were compared in the study sample, significant differences were found in eight out of the 12FPI instrument variable, inhibition, irritability, aggressiveness, fatigability, physical complaint, health concern, frankness, and emotionality between athletes and non-athletes. It was observed that there were specific and unique psychological characteristics existing in Brazilian high level athletes when compared with non-athlete sample. The groups were found
significant in the majority variable, indicating that athletes present different psychological characteristics.

Ward (2005) conducted a study to find out the differences in personalities between non-athlete and athletes participating in selected sports. He wants to clear that there was a significant difference in measures of ambitions, perseverance, self-esteem and power, motive between non-athlete and also between different sports such as Soccer, Volleyball, Basketball, Softball, Football, Track, Cross-Country. For the purpose 118 high school students were tested on a 40 question personality test, composed of four different tests published in the book of personality test. The personality traits measures were ambition, perseverance, self-esteem, and power motive. 32 students were non-athletes (they did not play any of these sports: Soccer, Volleyball, Basketball, Softball, Baseball, Track and Cross-Country) and 86 subjects played one or more of the sports. The results of this study show that athletes have higher ambition, more perseverance, high self-esteem and higher power motive than non-athletes.

Lata and Bhatia (2004) conducted a study on 100 women Hockey players, to find out the relationship between physical fitness and personality traits at different levels of competition. Haro Singer Fitness Test and cattle’s 16 PF personality test were used as a tool to obtain data. The result shows that national level Hockey players were found to be more intelligent where as international level women Hockey players were found confident, self assured, sincere and they have higher level of cardiovascular endurance. Explosive strength of legs was found superior in intervarsity and international level players. Abdominal and shoulder strength were found significantly better in Inter-district and national level Hockey players. The study also reveals that significant relationship of physical fitness variable with personality traits i.e. A, F, H, I, N, O, Q1 and Q2 found at national level and insignificant difference was found on other personality traits with all physical fitness variables. Result of the personality inventory shows group differences, some of statistical significance, with respect to the four-personality traits. Fences indicated by their test score that they were more ascendant than Basketball Player, Volleyball players, and Boxers, the difference being statistically significant at 1 percent level of confidence. He also found difference in many other groups of players.
Sean and Robert (2003) “examined the Personality Profile of Mount Everest Climbers. To obtain the purpose of the study, 39 climbers (who were trying to cover the height of Mount Everest) were selected as subjects. To collect the data from the subjects Eysenck Personality Questionnaire-was used as a tool of the study. The result of the study shows that higher scores was found in climbers on variable Extraversion (sociability) and Psychoticism (tough-mindedness) scales and lower scores on the Neuroticism (anxiety) scales than for the normative sample. This profile is reliable with the model typically observed for athletes and especially for top achieving athletes”.

Fulkerson et al. (1999) assessed whether personality characteristics, eating disorder distinguish between athletes and non-athletes. To obtain the purpose of the study, 318 high school athletes and 360 non - athletes were randomly selected. Risk Symptom Checklist, Restraint Scale, EDI, BMI and Multidimensional Personality Questionnaire (MPQ) were used as tool for the study. The results show that the variables disordered eating behaviours and attitudes were insignificantly differs in athletes and their counterparts. Less negative views of life were found in athletes than their counterparts but perfectionist tendencies may put some athletes at risk. Optimistic attitude of athletes and high self-efficacy may serve as defensive factors on life.

Ralph et al. (1999) conducted a study based on two purposes: (a) to resolve that athletic performance could be predicted by the five-factor model of personality. (b) To exhibit the utility of the five-factor model of personality to conduct a research on athletic competition. To obtain the purpose of study, seventy nine (N=79) female players were selected as subjects from various women NCAA Division 1 soccer teams. To collect the data from the subject a bipolar adjective scale was designed and further it was completed by all the subjects. Actual game statistics and ratings of coaches on various performance extents were also collected. The result of regression analysis shows that the coaches ratings (23% of the variance) describe personality dimensions of neuroticism and conscientiousness in favour of performance predictor and conscientiousness was the exclusive predictor of concrete games statistics.

Dennis et al. (1998) analysed the male and female personality characteristics who participated in team sports. The male and female subjects were selected from different college teams (Baseball, Football) and (field Hockey, Lacrosse & Equestrians). Five scales of the ZKPQ were used to compare the subjects. The finding
shows that team players were found significantly better on activity. On the neuroticism anxiety scales players were found lower than the general population of college. Higher scores on activity were found in Lacrosse and field Hockey athletes than equestrian players. On this scale the score of Football player found lower than Baseball player. Contrary to predictions, the score of impulsive sensation seeking in Football players were found lower than general population and insignificant differences were found in general population (female) and female Lacrosse and field Hockey players. Lower scores were also found on this scale in Baseball players. On the basis of findings null hypothesis was rejected. They concluded that unusual sensation and personal challenges are more in participants of high risk sports player.

Boris and Jan (1996) investigated the endurance sports and personality traits. To obtain the purpose a group of (n = 73) non-exercisers and a group of (n=86) triathletes were selected as subjects. Neuroticism and lie scores did not differ between groups. Average sportsmen were found fewer extraverts than outstanding athletes. Neuroticism was related with “management of negative effect” and “recreation” as reasons for beginning with endurance sports. Improvements of extraversion linked with sports activities and “goal achievement/success”. Positive changes in “physical health” were associated with intensity of training. These results of the study are associated with endurance sports and might be helpful for successful performance.

Jan and Timothy (1995) observed the effect of personality on social facilitation in a sports situation. 20 subjects were selected for experiment by initially screening with administration of the E.P.I. Out of twenty subjects ten were chosen as extraverts and ten introverts. Table Tennis serve put on marked area was selected as a task. The tasks were performed alone and also in front of the audience. Two-way ANOVA with one repeated measure was used to analyse the result. The result revealed that the interaction between audience and personality type was found highly significant. The results predict that extravers perform better than the introverts in the presence of an audience and vice versa for the alone condition. They concluded that the personality traits i.e. extraversion and introversion is highly significant for research related with social facilitation.

Montserrat (1991) investigated the relationship of participation in high physical risk sports activities and personality. To find out the mentioned objective 72 mountaineer, 221 sportsmen, twenty-seven alpinists and 54 general subjects were selected as subjects. The Sensation Seeking Scale, Impulsiveness Scale of the IVE,
EPQ, Susceptibility to Punishment and Reward Scales and the Socialization Scale of the CPI were administered to collect the data from the subjects. The results indicate that the subjects who were engaged in high physical risk activities were found extrovert, emotionally stable, confirming to social norms and seeking thrill and experience by socialized means.

Daniel and John (1990) “analysed the multidimensional theory of leadership (Chelladurai's) and Cattell's sixteen personality factor questionnaire to determine whether the personality and specific perceived leader behaviours are predictive of performance in collegiate footballers. Two hundred seventy two Football players from various south eastern United States universities were selected as subjects. All the subjects were grouped in three athletic performance categories i.e Regulars, Substitutes, and Survivors. The results show that the personality traits emotional stability, extroversion, group-dependence and tough-mindedness along with the perceived leader behaviours of training i.e. Democratic behaviour, social support, autocratic behaviour and rewarding behaviour, were predictive of performance independently and interactively in collegiate football players”.

Frank (1988) “examined the personality traits of two groups. One group comprised dancers (attending a professional ballet school for 1or 2years). The aged ranged between 11 or 12 years. The other group comprised dancers (not attended the same ballet school for at least 4years). The aged ranged between 15 or 16 years. Two control groups were also selected. The Children selected for control group had not participated in any activity. Some significant differences emerged between dancer and non dancers on self-concept and self-esteem. Further a smaller amount of favourable attitudes and a lesser amount of self-esteem was found among dancers and their counterparts. Dancers were significantly more introvert than non-dancers in both groups”.

Bruce (1982) examined the personality profile of athletes at various level of participation. Two hundred sixty five male athletes (n= 265) and one hundred thirty four female athletes were selected as subject of the study. The EPQ (German version) was used as a tool of the study. The whole group was found more extravert and fewer neurotics (compared to population norms). Sex differences were found in female profiles. Female were secured higher score on emotionality and lower score on psychoticism (tough-mindedness). No significant difference was observed in mean score of extraversion. Top-class male athletes were found more tough-minded and
less stable than middle- or lower-class participants. Top female athletes were found more extravert, less aggressive, less neurotic and tough-minded than the other athletes.

Ciaron et al. (1980) evaluated personality traits of athletes with cardiac and left ventricular performance. The subjects were belonging to various games i.e. Rowers, Judo players, Canoeists, Cross-Country runners and Archers. To obtain the data from the subject’s 16PF questionnaire was used as a tool for the study. Differences of Personality traits observed in each others. Cross-country runners obtained low score on factor F; rowers had highest Q3 scores. The result shows that cross-country runners are deliberate individuals, the rowers score indicative of self-discipline and compulsive tendencies. Cross-Country runners significantly differ from Judo players. Judo players were also more assertive than archers. The results also revealed that in resting and exercise conditions personality traits were correlated with physiological data.

Jean (1980) “assessed the personality and stress in Shooting sports. Investigator found that mental skill is one of the important factors for success in Shooting Sports. The shooting is referred as “a sport of the mind”. The mental make-up of shooter plays a very widening role in determining the success or failure of a shooter. Shooters are preselected by desirable quality of their personality traits for different kinds of shooting sports. Shooters were also differs in the way they react to stress. Coping abilities of shooters give an almost 100% prediction rate of a shooter's success or failure at international level”.

**Respiratory Indices**

Mahotra and Shrestha (2012) compare the pulmonary functions in Nepalese athletes. A cross sectional design was employed in this study. Total of 84 athletes from different games were acted as subjects understudy. Further, the subjects were divided as weight lifters (n=16), footballers (n=41), swimmers (n=10), marathon runners (n=8) and sprinters (n=9). All the subjects were participated in national games, age mean ± standard deviation was 25.71 ± 4.55 were selected for the study and they all were tested with the spirometer. SPIROLAB II Spiro meter based on American Thoracic Society (ATS) were recommended in the sitting position for applying the Spirometry. As to find out the percentage role of the different parameters i.e. age, sex, height, weight and race in the FEV1, FVC and PEFR was involved.
Results reveal that athletes have stronger pulmonary muscles. Pulmonary function significantly differs among different groups.

Tulin et al. (2012) compared pulmonary functions between athletes and sedentary males. A total of 250 athletes were acted as subject. Further, the subjects were divided in five groups i.e., Football (n=50), Volleyball (n=50), Basketball (n=50), Handball (n=50) and sedentary males (n=50). The age of the subjects was ranging from 15-16 yrs old. To test the functions of lungs the forced vital capacity, vital capacity and maximum voluntary ventilation values were measured. Results reveal that Handball players and Football Players were found to be higher in the VC than sedentary people, It was also found that the (VC) of the of Handball players was found to be higher in comparison to the Football, Volleyball, Basketball players and sedentary males. Whereas in case of (FVC) sedentary males were found to be lower in comparison to the handball, football and basketball players but in the MVV, it was observed that Football players was found to be higher values in comparison to the Volleyball and sedentary males.

Hamid et al. (2012) “examined pulmonary function test changes in physically fit female students of Kerman University. For the purpose of the study, 60 physically fit females students were selected as subjects for the study. To obtain the data from the subjects cooper test (12min) was used as criterion measure. Pulmonary function tests forced expiratory volume in 1, forced vital capacity, maximal expiratory flow at 50% of the FVC and peak expiratory flow were measured at rest for five minutes before and fifteen minutes after an exercise. Results reveal that 40% symptoms of EIB were found. Symptomatic and asymptomatic subjects were not differs on baseline of PFT values. Symptomatic subjects obtained lower score than asymptomatic on all PFT value immediately and after exercise”.

Davar and Parisa (2011) investigated the effect of aerobic and anaerobic swimming (6week) on vo2max and lung volumes and capacities in student athletes. To fulfil the purpose of the study, one hundred sixty eight (N=168) students from (Khorramshahr Marine Science and Technology University) were selected as subjects. Further among that 30 subjects were randomly chosen and again randomly divided in to 2 equal groups. Group1: aerobic (n=15) and group2: anaerobic (n=15). The independent and dependant t-test and smirnov-kolmogorov test were used to analyse obtained data. Results reveal that relationship was found between the six-week anaerobic and aerobic intermittent exercises on pulmonary function i.e (VO2max,
IRV, ERV, VC and TLC). Further the result of aerobic and anaerobic intermittent swimming (6week) was found significantly differs in the case of O2max.

Parisa et al. (2011) investigated the effect of sprint and endurance interval training (eight-week) on lung volumes and capacities on female nonathletic students. To fulfill the purpose of the study, a total of 45 participants (age ranging from 18-26 year) were selected as subjects for the study. Further all the subjects were divided into three equally distributed groups i.e. Control group (n=15), sprint interval training group (n=15) and endurance interval training group (n=15). To find out the effect of eight week sprint and endurance interval training on various pulmonary function and lung capacities pre and post test were taken from the subjects. The obtained data was analyzed by MANOVA and follow up by Tukey Test. Significant differences were found on total lung capacity and expiratory reserve volume.

Greg and Stephen (2009) “explained that Physiological measurement of athletes play a vital role for the classification of the athletes. It also helps to monitor progress and to analyse the level of performance of an athlete. It also helps the coaches to design the training program of an athlete. But it was amazing that the common physiological estimation executed on the athletes can also be carried out on kids suffering from diseases. From the above said practice, interesting results were found and clinicians have come to know surprising things. Clinicians learnt that examination of the physiological responses of athletes will be helpful to assess the physiological examination of patient populations. The investigators of present research describe that the distinctive response of various physiological test of athletes regarding aerobic and anaerobic metabolism have to be given special focus to find out respiratory limitations and exercise performance”.

Luciana et al. (2009) observed that slight information was available about the effects of sport on aging selection of players on the basis of physiological characteristics of earlier athletes. The objective of present investigation was to find out the anthropometric and physiological features of Volleyball players in Italy. For the purpose, one hundred forty six (N=146) subjects acted as a sample of the study. All former athletes underwent measurements of standard anthropometry, cardio-respiratory function, muscle strength and cognitive function. Body measurements were examined with the help of anthropometric techniques. Further responses regarding lifestyle were taken by questionnaires. The results show that various anthropometric and physiological characteristics were significantly differs in between
former and current players. The study highlights the meticulous performance of earlier players in cognitive functions. From the result of the study the researcher concluded that dynamic lifestyle had positive effects on the biological age profiles of earlier athletes.

Olufeyi (2001) investigated the relationship of lung function (TV, FVC, FEV) and oxygen consumption rate in between athletes and non athletes in Nigerian setting. 45 students from the University of Lagos acted as participants in the study. Further, all the participants alienated in two groups: athletes (n=20) and non athletes (n=25). The non athletes group acted as control group. Results reveal that in male athletes TV and FVC but not FEV were found to be significant than non athletes whereas a significant difference was found among the non athletes in case BMR. The researcher concluded that respiratory functional capacity of athletes was found to be better than non-athletes in Nigeria.

Shupak et al. (2000) documented the effects of strenuous swimming on pulmonary oedema and also on relevant physiological parameters. In an open sea, 35 men were tested again and again in two consecutive months. At the time of cough to the subjects, a tentative diagnosis of SIPO was put into existence to overcome this barrier and 29 of the SIPO cases were found and results show a continuous decrease in the Oxygen saturation in SIPO where as Mean FVC and FEV1 was found to be lower than the SIPO group which was serious and mean FVC and mid-expiratory flows was found to be later in the subjects. Reduction in lung volumes and hypoxemia was related with shortness of breath and coughing following strenuous swimming.

Chhabra (1998) “observed that vital capacity can be measured as forced vital capacity, slow vital capacity and Inspiratory vital capacity (FVC, SVS and IVC). Sixty asthmatics and 20 normal subjects were carried out to perform manoeuvres for mentioned measurement with the help of dry, rolling-seal spirometer. Mild, Moderate and severe airways obstructions were found in the asthmatics. Results reveal that in normal subjects an insignificant difference was found. Other three dimensions of vital capacity (VC) were significantly differs in all other groups. Forced vital capacity (FVC) was found to be smaller than (SVC) and (IVC) but it was noticeable greater in the patients but an insignificant difference was found in the FVC, SVC, and IVC normal's and asthmatics. Further significantly differences were found (with modest and rigorous airways hindrance) in asthmatics”.
Doherty and Dimitriou (1997) “conducted a study to compare lung volumes of land based athletes, Greek swimmers and control group called sedentary. The allometric scale was used as criterion measure. A total of 459 symptomatic Greek children and young adults (age ranging from 10-21 years) were selected as subjects for the study. The subjects were divided in three groups i.e swimmers (n=159) land based athletes (n=130) and sedentary acted as a control group (n=170). Portable Spirometer was used to perform forced expiratory manoeuvres. Forced vital capacity, forced expiratory volume in one second (FEV1.0) and peak expiratory flow was measured. With the uses of standardised anthropometric techniques body mass and physique were also examined. Data were analysed by applying Logarithmic transformations. Results clearly showed that in a high correlation was found in stature of males and females. In addition, male national standard swimmers (n = 38) had found superior FEV1.0 than their opponents”.

Schoene et al. (1997) “conducted a study to differentiate spirometry and to examine the incidence of exercise-induced bronchospasm (EIB) during competition in elite athletes (track and field athletes). The sample of the study consisted of two hundred sixty two athletes (N=262). Further the subject was divided in two groups i.e men (n=170) and women (n=92). Before the competition spirometer was used to measure peak expiratory flows of 120 men and 69 women athletes. Peak expiratory flows also measured in 50 men and 23 women athletes before and after competition. Results indicate a significant difference was found among the male sprinters and other track athletes in vital capacities. Larger vital capacities had been found in male and female field (throwing) athletes than both runners and other field athletes. Total 10% of men and 26% of women track athletes were found with lower peak expiratory flows within 15 min after competition. A greater peak expiratory flow was found in the longer-distance events runners”.

Khanna et al. (1996) conducted a study to determine the physical and physiological profile of Kabaddi players and the physiological demands of players playing a Kabaddi match. A total of 16 players were acted as the subjects in the study and the variable included in the study was Maximum aerobic capacity (VO2max), maximum ventilation (VEmax), O2 pulse, respiratory equivalent (RE), maximum heart rate, and O2 debt. Heath and Carter method was used to test the somatotype of the players. The eight players who represented India in the Asian Games, 1994 were also tested in the heart rate variable in a selection trial match and oxygen
consumption (VO2) was found out from the playing heart rate through a heart rate VO2 regression equation. A lactate was also collected at the end of the match. Results reveals that the average heart rate and oxygen consumption during the match were noted 146.5 (SD 9.25) beats min\(^{-1}\) and 2.25(0.59) litre min\(^{-1}\) respectively.

Chin et al. (1995) evaluated the Hong Kong elite Squash players on the basis of sports specific fitness and physiological profile. The study underwent prior to the selection of Squash team for the “Asian Squash Championship” to be held in the year 1992. To obtain the purpose of the study 10 Squash players were selected. A continuous treadmill running test was used to measure the maximum oxygen uptake. The subjects also performed sports specific field test in a Squash court. The results of the study shows that high muscle strength and cardio respiratory sports specific fitness were found in Hong Kong Squash players. The researcher concluded that this may be the one of the key factors for the success of the Hong Kong Squash team players in the mentioned championship.

Lakhera et al. (1994) evaluated the Indian athletes and non-athletes during adolescence on the basis of lung function. For the purpose of study a total of 40 boys (20 athletes and 20 non athletes) were selected as sample for the present investigation. The age range was thirteen to sixteen years. All subjects were examined at yearly intervals over a period of two years. The physiological variables i.e Forced Vital Capacity (FVC), Expiratory Reserve Volume (ERV), Forced Expiratory Volume in one second (FEV1), Maximum Voluntary Ventilation (MVV) and Inspiratory Capacity (IC) were selected as a tool for the study. Results suggest that no negligible additional effect of physical activity were observed on a development of the lung during adolescence. The proper nutritional and health conditions are governed by the process of growth of lungs. It has been concluded that physical activity during the growth period of lungs may increase endurance in respiratory muscles.

Dey et al. (1993) conducted a study with the objectives to observe the physiological and physical qualities of national Kabaddi players in 1990 (Asian medallist). Total twenty five men Kabaddi players who were attending the national camp before Asian games were evaluated for the purpose. The physical characteristics which were taken understudy were (lean body mass, body fat and somatotype). The physiological characteristics which were examined to obtain the purpose of study were included maximum oxygen uptake capacity, back strength and anaerobic
capacity. Skin fold thickness was taken at four different sites (by using Harpenden skin fold callipers) to calculate the body fat. The result of the study reveals that the body fat of Kabaddi players was found to be significant higher than sedentary people. The physique of the Kabaddi players was found to be endomorphic and mesomorph.

Bertholon et al. (1986) “studied the spirometry recording and maximum expiratory flow-volume curve between athletes of various disciplines. Total sixty seven athletes (N=67) were evaluated by the researcher to obtain the purpose of the study. The age range of the subjects was between 15-27 years. The subjects were further divided into three different disciplines i.e Kayakists, Rowers, Swimmers and Cyclists. The non athletic control group consisted of twenty (n=20) adults and thirteen (n=13) adolescents of same age group. For duration of 6-10 months of training again and again these recordings were tested. The finding of the study clearly shows significant differences was found between the groups of adult athletes and their counterparts (control group) on the variable “forced expiratory volume in the first second, peak expiratory flow and vital capacity. The rowers group found higher score on vital capacity. The adult athletes together (n = 47), found higher flow at 50% of their VC (V50) than counterpart”.

Martin and Stager (1981) “assessed that high ventilation the muscles (VM) of ordinary persons turn into fatigued. But the level of fatigue preserve throughout exhausting exercise? If so, this may be due to forceful training performed by endurance athletes. Endurance training is helpful to increase ventricle muscle endurance. For explaining this disagreement, female athletes (n=8) and female non-athletes (n=8) were selected as subjects for study. Both two groups were in line on the basis of age, physique, and lungs capacity. The subjects were examined on long and short time maximal ventilation. Findings suggest that higher Ventilatory endurance was found in 2 long term breathing tests. In the first long term test ventilation of athletes was improved (30 l/min) in duration of each four mins. Greater fraction of their 12-s MVV was observed in athletes than their opponents. Total 80% of the 12-s MVV Ventilatory endurance observed constant until exhaustion in the second test. On average eleven mins. endurance time observed for athletes and three min. for non-athletes”.

Davies and Thompson (1979) conducted a study on aerobic performance. To obtain the purpose of the study, total twenty male ultra marathon runners were selected as subjects of the study. The subjects were further divided into two groups,
male ultra marathon runners (n=13) and female ultra marathon runners (n=9). All the subjects were examined in the laboratory setting. Findings were associated with their time in events distance ranging from five kilometres to 84.64 km. The results show that the mean of VO2 max was higher in men than women. For a given speed or distance O2 cost (VO2) was found same in both group. While uphill run the time of five kilometre distance of male athletes was highly correlated to their VO2 max, when the distance increased, the relationship of VO2 max with male athletic performance reduced and the association between time and %VO2 max improved. Footwear, clothing, and running technique and other related factors play lesser role in the group of male distance runners. The distance of 42.2 km (marathon) was now completed by any of the female athletes because the intermediate times were not available.