The study of the psychological characteristics of sportsmen is receiving greater attention of the sports scientists today. All those interested in the development of sports are not only analysing the behavioural and cognitive aspects of personality but the psychological profile is also being used for identification, placement, selection and preparation of an athlete for competition. Numerous studies have been conducted on various aspects of sportsman's personality. The findings of all such studies are mostly divergent.

In the recent past, many attempts have been made by the scholars to explain the psychological dimension of athletic performance. Such efforts may be an outcome of Alderman's (1979) remarks that regardless of ability, skill or fitness a person possesses, the success or quality of his performance will, in the final analysis, probably depend on his particular psychological make-up.

Carlson and Kroll (1967), Lakie (1962), Rushall (1970), and Singer (1975) found no personality differences among various levels of skill. Studies affirming the influence of
psychological variables on athletic performance have been conducted by numerous researchers (e.g., Booth, 1958; Cattell, über and Tatsuoka, 1970; Fletcher and Dowell, 1971; Foster, 1977; Johnson, Hutton and Johnson, 1954; King and Chi, 1974; Langer, 1966; Laplace, 1954; Malumphy, 1968; Ogilivie and Tutko, 1971; Peterson, Weber and Trousdale, 1967; Singer, 1969; Straub and Davis, 1971; Werner, 1960; Werner and Gotheil, 1966; Whiting, Hardman, Hendry and Jones, 1973). The assessment devices have been quite variable, with the Rorscharch and House-Tree-Person (H-T-P) representing projective personality testing and the Minnesota Multiphasic Personality Inventory (MMPI) contributing more objective data. The Edward Personal Preference Scale (EPPS) has been widely used but the Cattell 16 PF Test leads in the frequency of use and in the demonstration of significant findings.

'Personality' is generally considered to be a unique organisation and interaction of a number of personal factors that determine an individual's specific pattern of adjustment with environment. This has always been a very complex subject. Investigation and the specificity of individualistic nature of sportsman's interactions in a particular situation has further added to its complexity. Although most of the findings put forward by various scholars to explain an athlete's sports behaviour are equivocal, they need to be surveyed to understand an athlete's behaviour.
under the impact of various stimuli in changing situations.

In the literature on sports psychology interpretations have been made about the psychological make-up of individual and team athletes. Temperamental demands for various skills have been identified and related to the range of skills. Psychological factors related to athletic performance have been listed. Attempts have also been made to study the initial pattern of entry into various sports. The emergence of the hypothesis of personality heterogeneity in team sports is also being investigated. Traits have been considered as the "spokes of the wheel" of human behaviour, which carry the impact on sports participation and competition. It has also been established that each sport activity makes a specific psychological demand. The biological and psychological genesis of extraversion-neuroticism has been amplified. Several other attempts have also been made to explain the psychological characteristics of athletes (Kane, 1968; Singer, 1972; Kroll, 1970; Ogilvie, 1967; Kirkcaldy, 1982; Eysenck, 1967, 1975).

The researcher has examined and summarised the relevant literature available. The review of literature has been presented under the following headings:

a) Extraversion, neuroticism and psychoticism
b) Adjustment
c) Vigilance
Extraversion, Neuroticism and Psychoticism:

Eysenck (1965) described that the typical extravert is sociable, likes parties, has many friends, needs to have people to talk to, and does not like reading or studying by himself. He craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment, and is generally an impulsive individual. He is fond of practical jokes, always has a ready answer, and is optimistic, and likes to "laugh and be merry". He prefers to keep moving and doing things, tends to be aggressive, and loses his temper quickly. The typical introvert, on the other hand, is a quiet, retiring sort of person, introspective, fond of books rather than people. He is reserved and distant except with intimate friends. He tends to plan ahead, looks before he leaps, and distrusts the impulse of the moment. He does not like excitement, takes matters of every-day life with proper seriousness. He keeps his feelings under strict control, seldom behaves in an aggressive manner, and does not lose his temper easily. He is reliable, somewhat pessimistic, and places great values on ethical standards.

The general nature of neuroticism is assessed as instability, unadaptability, depressive moods, weak dependable attitude, narrow interests and symptoms of nervous breakdown (Eysenck, 1953). His strong emotional reactions interfere
with his proper adjustment, making him react in irrational ways (Eysenck 1975). Such individuals frequently complain of vague somatic upsets such as headaches, digestive troubles, insomnia, backache and also report many worries, anxieties and other disagreeable emotional feelings. Such individuals are likely to develop neurotic disorders under stress. These predispositions, however, should not be confused with actual neurotic breakdown. A person may have high scores on neuroticism yet function adequately with regard to work, sex, family and social spheres (Eysenck and Eysenck, 1968).

Neuroticism is considered as an autonomous drive. It is conceived of as a predisposition of strong autonomic activation producing higher cortical arousal (McLaughlin and Eysenck, 1967). Neuroticism, from this angle, has motivational potential equivalent to drive (Hall and Lindzey, 1970). Franks (1956) found a very high correlation of 0.92 between neuroticism and anxiety as measured by Taylor's Manifest Anxiety Scale. No wonder, the two terms neuroticism and anxiety are often used interchangeably. Wilson (1978) referred to the psychotic behaviour as bizarre, personal, hostile and anti-social.

Kane (1968) had questioned whether a single personality type exists for athletes. Some sports may show significant differences in personality profiles of its participants.
in cases where a sufficiently wide range of sports are selected (representing many teams or individual sports). It is doubtful if such clear cut differences persist.

After an extensive review of studies using the 16 PF Questionnaire to investigate possible relationship between personality and performance in sports, Hardman (1973) concluded that the relationship between athletic participation and introversion/extraversion shows great inter-sports differences. It is safe to assume that positive correlation may exist between performance and extraversion only in specific sports, as some sports do attract the introverted personality type.

Hendry (1970) found that the major differentiators at a higher level of performance seem to be that team-sport athlete tends toward stable extraversion and individual sport athlete, while retaining necessary resilience and urgency, tends be more introverted and anxious.

Kruse (1977) found differences in personality caused due to the position held in football. Maul and Voight (1972) found that aggression is a function of the position in the team (volleyball). Friedman (1973) could not replicate these findings. The study of Morgan and Costill (1972) revealed that world class wrestlers were more extroverted than the normal population and the other athletic sub-groups.
Daino (1985) found that tennis players were more extroverted and less introverted compared to normal population. Sandhu, Mann and Brar (1987) concluded that the team players and wrestlers score almost equally with regard to extroversion. However, the wrestlers were placed higher on the scale of neuroticism.

Singer (1969) distinguished team sport athletes from individual sport athletes by using Edward Personality Preference Scale (EPPS). He reported that tennis group scored significantly higher than both basketball and normative groups on achievement variable. On aggression, the normative group achieved lower than the other two groups. Tennis group demonstrated more dominance than the Baseball group which in turn scored significantly higher on the abasement factor.

Using the MMPI, Both (1958) compared the personality traits of the following groups of college students: (1) Freshman and upper class athletes and non-athletes; (2) Freshman and varsity athletes who participated in only team, individual, or team and individual sports; and (3) athletes who were rated as poor or good competitors. He found that varsity athletes scored significantly lower on anxiety and higher on dominance than fresh athletes. On social responsibility variable, the upper class non-athletes scored significantly
higher than freshman athletes and non-athletes and the varsity athletes. Varsity athletes who participated in only individual sports scored significantly higher on depression variable than those who participated only in team sports. In conclusion this study has determined that differences in personality as measured by MMPI do exist between athletes and non-athletes and between participants in individual sports, in team sports, and in team-individual sports.

The study of Morgan and Costill (1972) revealed that world class wrestlers were more extroverts than the normal population and from most of other Athletic sub-groups. Daino (1985) found that tennis players were more extroverted and less introverted compared to normal population. Sandhu, Mann and Brar (1987) using E.P.I. investigated 67 individual and Team athletes of University level found team players and wrestlers almost equal with regard to extraversion. However, the wrestlers were found higher on the scale of neuroticism.

Sack (1975) revealed that middle and long distance runners when compared to handball and football players were different along the dimensions of dominance, introversion-extroversion and build. Warburton and Kane (1966) suggested that many top class track and field athletes and swimmers show marked introversion. Kane (1970) found a complex relationship between the 'extroversion' and performance of 'track athletes'.
Sprinters and throwers were frequently more extroverted than middle-distance runners. He claimed that the increase in the running distance is directly proportional to introversion.

Regarding the positional categories in team sports, interesting findings were reached by Kirkcaldy (1982). The attacking players exhibited higher levels of emotional instability than defensive players. In addition, the more offensive players were more extroverted. This suggests that the sensation-seeking emotional attacker probably has a very different role from the relatively less extroverted defensive players.

The studies were conducted by Williams and Youssef (1972) to find out if the players of various football positions differed statistically on certain personality (such as hostile) and motor-skill parameters. MMPI Scales did not reveal many differences across thirteen positions of the game. The results supported the hypothesis that the players of various football positions were stereotyped on hostility both on and off the field and also regarding the motor-skill characteristics. That position in a game does not seem to affect the personality characteristics may be due to the fact that most of the players in a game usually play in different positions at different times. Thus the hypothesis that athletes playing at different positions differ in personality was disapproved.
Singer (1975) quoted some professional football teams that were administered a personality test in order to determine player-position compatibility. "What is the extent to which a player with a given personality profile might be expected to do well in a position, considering that a particular position under certain unique demands on him?" It may be true that athletes are distinguishable by position on a team, but the hard data that could support such a belief are lacking.

Kroll's (1967) study indicated that certain sports attract certain types of athletes. Individual sport might attract participants who fit Alderman's definition of dominance: self-confidence, extreme assertiveness, boosting, conceit, aggressiveness, vigor, force, egotism, unhappiness, social disapproval, unconventionality and a tendency to extra-punitiveness.

Slusher (1964) tested various high school athletic groups - wrestlers, swimmers, and baseball, basketball and football players - administering MMPI, and found a number of significant differences among the groups. The least neurotic group was that of the swimmers, while football players and wrestlers were found similar in displaying strongly neurotic profiles. Basketball players were self-centered and prone to depression. Contrary to this, Lakie (1962) observed no such differences among 230 athletes.
from different colleges in the following sports: wrestling, track, tennis, golf, football and basketball. He used five scales of the Omnibus Personality Scale.

Kroll and Crenshaw (1968) used the Cattell 16 PF to study 387 athletes (81 footballers, 141 gymnasts, 94 wrestlers and 71 karate participants). On the basis of certain traits, the four groups seemed to fall into two categories: the football players and wrestlers were similar in their psychological profiles; both groups were significantly different from the group of gymnasts and karate participants. The results were surprising because football is a team game and wrestling is an individual sport. Past research has generally indicated that team sport participants differ from individual or dual sport participants. The findings can perhaps be explained by the fact that both football and wrestling are combative activities requiring strength, endurance and agility.

Hardman's (1968) and Kane's (1966) studies with soccer players lend support to the notion that contact sportsmen are more extroverted than the general population. They are considered to be tough-minded, self-confident, self-assured, ambitious, organised, dominant and aggressive (Ggilvie 1967). In fact, the athletic features of speed, power and endurance, required in abundance in soccer, are significantly related to extroversion (Kane, 1970).
There is little consensus on the definition of a 'good' or 'successful' athlete. The many reports in the literature are nevertheless enlightening in that they indicate that psychobiomotor characteristic tend to differentiate relative levels of athletic activity and/or ability (Carlson, 1969; Fletcher and Dowell, 1971; Keller, 1942; Laplace, 1954; Olsen, 1956; Slusher, 1964; Werner and Gottheil, 1966).

While there has been much contradictory evidence in the area of a sports personality, several personality traits appear consistently across studies dealing with athletic ability. The more successful athlete is relatively more aggressive and dominant, adventurous, conservative, tense and enthusiastic than the less successful athlete or non-athlete (Singer, 1975).

Kane (1965) administering 16 PF observed that general athletic ability was related to certain personality dimensions. The outstanding athlete's trait such as aggression, dominance, persistence, drive, confidence and general extroversion were found to go most often with success in athletic achievement. Successful athletes were also found to be easy going and sociable individuals without anxieties or inner urgencies.

Peterson et al. (1967), administering the Cattell 16 PF Questionnaire found that elite performers in individual
sport differed from those in team sports in terms of being dominant (factor C+), adventuresome (factor H+), sensitive (factor I+), imaginative factor M+, radial (factor N+), self-sufficient (factor Q2+) and less sophisticated.

Johnson, Hutton, and Johnson (1954), using projective techniques, found champion athletes readily distinguishable from others. The former possess traits of extreme aggression, uncontrolled emotions, high anxiety, high self-assurance, high levels of aspiration, and a strong need to achieve. Thus, it appears that superior athletes can be typified even though there are marginal differences amongst superior athletes. Ogilvie and associates (1968) compared the personalities of medalists and non-medalists Olympic swimmers. They found that medalist swimmers were less anxious and neurotic, more self-assertive, independent and aggressive than the non-medalists.

Ogilvie and Tutko (1968) also observed that personality differences exist between champion and average athletes. The outstanding athlete was described as one who has a high need to achieve, can resist the stress of competition, has great psychological endurance and is confident and assertive. Helmet and his associates (1972) found that top athletes were straightforward, sociable, realistic, tough-minded, willing to help and having high resistance.
Kroll and Peterson (1965) compared the losing and winning football teams and found significant differences favouring winning teams. The winners had greater abstract ability and were more venturesome and bold, more self-assured, self-confident and placid, more self-controlled and better integrated. Contrary to this Kroll (1967), after classifying three groups of wrestlers and three groups of karate participants, did not find significant differences in the personality profiles.

Successful athletic performance requires an interplay of the attributes of the task and those of the person. Increasingly, researchers interested in applying psychology to athletics are paying attention to this interaction and moving away from excessive reliance on a model of performance which presumes that personality traits in themselves determine success or failure (Cheldadurai and Saleh, 1979; Martens, 1975; Pezer and Brown, 1980; Rushall, 1970). This development is consistent with the findings of the personality theory in psychology. The best predictions of behaviour are possible when both person and situational variables are taken into account (Bowers, 1973; Endler, 1977; Mischel 1973). In sports psychology, an interactionist model, while more complex than a personology model, affords
the individual athlete an enhanced opportunity for success insofar as the factors influencing performance can be made specific and modifiable. Modification of one's personality trait on the other hand is a Herculean task.

Psychological variables of aggressiveness and conservatism are significantly related to success in the offensive backfield positions. These variables may enable players in this position to successfully cope with the highly competitive (physical) demands of football as well as the need to respect and submit to authority. Thus, these factors may be closely related to the motivational mechanism that enables successful football players to cope positively with the rigors of training and potential subjection to coaching styles that humiliate or anger the player in order to motivate and push him to the utmost physical limits (Secunda, McGuire and Burroughs, 1986).

Some psychologists hold the view that performance in sports is related to stability that provides the base for "High tolerance" for emotional stress. This line of argument has been confirmed by Cattell (1965) on the ground that a high score on factor 'H' indicates a kind of autonomic toughness and that such trait would enable the athlete to withstand the pressure of competition. However, it seems controversial to relate excellence in sports with personality.
Standish and Champion (1960) found that Neurotic subjects performed well on an easy task when drive was high but performed poorly on a difficult task with similarly high drive levels. It was observed that the high drive performance was directly proportional to learning.

On the other hand Da Silva (quoted in Salmela, 1979) points to reports that the Brazilian soccer players with balanced psychological profile are often not the best players, while the very good one’s sometime demonstrate neuroticism.

Kirkcaldy (1984) studied the differences in time estimation between extraverts and introverts. Two groups were formed from amongst subjects scoring one standard deviation (SD) higher the group mean "for factor extraversion" and those scoring at least one SD lower the mean by taking the cut-points of nine and seventeen. The introverted and extroverted groups were formed on the basis of scores obtained on the E.P.Q. Scale. Both groups produced negative time errors. However, there were some indications that it was greater in the case of extroverts although the differences were not significant.

The trend in Kirkcaldy’s results strengthens the view expressed by Eysenck (1959) that extraverts are characterised by their ability to generate more inhibition
and by ability to dissipate it less quickly. Such subjects reveal greater negative time error than in case of introverts. Over a quarter century ago Claridge (1960) supported Eysenck's theory on the ground that in introverts energy is usually directed inwards (Reserved, Reflective etc.) whereas an extravert is externally attentive. Under conditions of minimal stimulation, e.g. in sensory deprivation, the extravert will experience a marked diminution in what relates to mental processes. In such conditions extraverts should make more negative time errors than introverts.

Negative time errors are reflected in performance in a number of events. For example, the quality of performance of a booster, smasher and blocker in volleyball, the receiver of pass in soccer and field hockey depends on how accurately the players estimate the temporal situacional aspects.

The fact that extraverts demonstrate relative discomfort in sensory deprivation has been highlighted by Rossi and Salmon (1965). He subjected 11 extraverts and 7 introverts to two to three hours sessions of sensory deprivation (1 in comfortable conditions). The subject completed an adjectival check-off list in both sessions, and established a 'discomfort index' on mean proportionate drop in self-related well-being following the second session.
The result corroborated the finding that the extraverts 
were more discomforted by sensory deprivation, than the introverts.

It can be inferred that the introvert is better equipped 
to cope with the conditions of reduced stimulation. He is 
likely to show less personal disturbance than the extravert 
who normally seeks a higher level of stimulation. Tranel 
(1962) has rightly theorised that the introvert's greater 
inclination to be passive and to adhere to instruction is 
in contrast to the extravert's greater action orientation 
and inclination to modify external conditions to alleviate 
discomfort.

Adjustment:

Robert (1956) has described the concept of adjustment 
as an interaction between the person and his environment 
each making demands on the other. In most cases, adjustment 
is a compromise between these two extremes (For this study 
Robert's definition is operational). Cronbach (1960) 
explained adjustment as a means to the end of accomplishment. 
The adjusted person is one who commits himself to socially 
desirable goals and uses his energies effectively in working 
towards them.

Frost (1970) warned, "It is critically important that 
those studying the psychological concepts as they apply to 
the area of physical education and coaching be carefully
attentive to the fact that social and cultural forces are operating constantly and a meticulous understanding of these is absolutely necessary in any attempt to unravel the many factors causing and revealing behaviour and its change in sports settings."

Loy (1968) remarked that sports as a social institution refers to the social order consisting of all social organisations in the society that one responsible for organising, facilitating and regulating the human actions in sport situations; sport as a social institution or social system be analysed in term of degree and kind of involvement. Very little is actually known about the socialisation outcome of sports participation.

"People need people" and consequently each person needs to establish relationship with the others. Schutz (1958) speaks of "compatible relationship" with others, meaning the capacity to live in harmony (Carron, 1982). Carron and Chelladurai (1981) studied the athlete-team relationship from the point of view of interpersonal relationship theory proposed by Schutz. Team sports require that athletes cooperate by adapting themselves continually to changing situations. Each athlete must interact in a constructive manner with other members of the team; thus, it is necessary that he adopts an open and flexible
transactional style in his interpersonal relationship. In view of the characteristics of team-competition the athlete should indeed be able to swing, depending on situations, between autonomous behaviour (wherein each member assumes responsibility for his own actions) and cooperative behaviour (wherein each member adapts himself to the proposal of his team-mates).

In an attempt to develop a valid and reliable group-cohesion instrument to measure task related and group related forces that exist in basketball sports groups, Yukelson (1983) administered the group-cohesion instrument to 196 inter-collegiate basketball players. Four significant common factors revealed by Alpha Analytic Techniques were labelled as attraction to the group, quality of team work, unity of purpose, and valued roles.

Sharma (1984) using the Cattell 16 PF Questionnaire, reported that Personality factor E+ (Aggressive) had been retained by basketball, football and volleyball sports groups excepting hockey sportsmen. Similarly, personality factor C+ (emotional stability) had been observed in the personality profiles of football and hockey sports groups but the same factor was not retained by basketball and volleyball sports group. Factor Q3+(Socially precise), appeared in the personality structure of football, hockey and volleyball
sportsmen. Group dependent factor Q_{3}- emerged in the personality profiles of basketball players. He had also found that the sportsmen representing universities as emotionally stable, aggressive, conscientious, trusting, practical and group dependent.

Two studies by Buhrman (1977), and Buhrman and Bratton (1978) have indicated that the profiles of deviants and athletes are markedly different. Buhrman and Bratton, in fact, concluded that "the profiles of deviants and athletes are diametrically opposite". Findings on the relationship between the extent of participation in athletics and delinquency are somewhat less conclusive. Buhrman (1977) reported a negative relationship, and Schafer (1969) and Segrave & Hastad (1982) concluded that the amount of participation had little or no impact on delinquent behaviour.

Verma (1975) reported that sportsmen participating in individual sports prefer own decision whereas sportsmen of team sports are sound followers and group dependent (group adherence). Winning and losing football teams were compared by Kroll and Peterson (1965) and the winners were reported to be socially bolder, self-controlled and better integrated than losers.

Biddulph (1954) also found differences between superior athletic groups and less skilled groups, the
superior athletes showed higher level of personal and social adjustment.

In another study, using the 16 PF Questionnaire, Verma (1976) found that Kabaddi players were emotionally stable (factor C+), whereas wrestlers were emotionally less stable (factor C-) and tense (factor $Q_4$). In the Indian cultural context, Giri (1977), by using the 16 PF Questionnaire, observed that contact athletes, as compared with semi-contact and non-contact athletes, were bright (Factor B+) and group dependent (factor $Q_2$). He further observed that personality patterns of each of the group at various level were similar.

Robert (1964) using the AAHPERD Physical Fitness Test and the Washburne Social Adjustment Inventory, studied the physical fitness and adjustment of students on the college campus. The differences in the scores of basketball and football groups on the adjustment inventory were not significant at .05 level of confidence. He concluded that many forces must be studied to determine the needs of students to help them in their social and emotional adjustment.

Buck (1971) selected Pollock Health Behaviour Inventory Test (PHBIT) to measure health behaviour (health knowledge, attitude, and practices) and the California Test of Personality to measure personal, social and total
adjustment of selected high school seniors. The study revealed that (1) other things being equal, a person who is well adjusted tends to have good health behaviour; (2) other things being equal, a person with good health behaviour tends to be well adjusted; (3) there exists relatively high relationship between low health behaviour and low total adjustment.

Bhushan and Aggarwal (1978), using 16 PF Questionnaire, found that high achieving sportsmen showed significant emotional stability, and dominating when compared to the low achieving sportsmen. Analysing the influence of various types of interpersonal behaviour on effectiveness of sports groups, Slepicka (1975) observed that the successful players were more cooperative, emotionally stable than the unsuccessful ones.

Maxeiner (1983) reported that successful volleyball players were more emotionally stable (factor C+) than the lower level players. Morgan and Johnson (1978) using MMPI found that successful athletes possess more desirable social traits than the unsuccessful athletes. Edward (1976) reported that physical, intellectual and social demands of development are interrelated and not independent of one another.

Vigilance:

Vigilance has been found to be the most important psychological determinant of human performance. In any
task, cues or stimuli, both exteroceptive and proprioceptive must be attended to, to enable the organism to perform its functions accurately. The term vigilance appears to have been first used in a technical sense by a British neurologist Henry Head (1926). He referred to vigilance as that state of central nervous system in which maximum physiological efficiency exists. He said, "when vigilance is high, mind and body are poised in readiness to respond to any event, external or internal." The pioneer research on vigilance was done by Mackworth (1948 and 1950). In the monograph, 'Research on the measurement of human performance' (1950), Mackworth traced the historical antecedents of vigilance to early studies on attention. One of the first investigation in vigilance, though not using the term, was done by Wyatt and Longdon (1937).

According to Siddle (1972), a vigilance task requires subjects to respond to a critical or a wanted signal which occurs randomly against a background of neutral or unwanted events. For the present study Siddle's definition of vigilance is operationally accepted. Kirk and Hecht (1963) defined vigilance tasks as "those tasks that require the detection of changes in stimuli presented serially during the long periods of time, when subject has little or no prior knowledge of the spatial pattern or temporal sequence of the stimuli".
Davis and Tune (1970) described that vigilance tasks are of two types: sensory and cognitive. They also maintain that performance in vigilance situations has usually been described in terms of correct detections, so the detection rate is usually held to be the definite index of the level of vigilance. Generally, vigilance tasks tend to be prolonged. However, many investigators have used tasks lasting only 5 minutes (Tompson et al., 1963; Davis, 1968; Malhotra, 1974; Mohan, 1980; Mohan and Malhotra, 1981).

Dealing with physiological aspect of vigilance, Eysenck (1965) has explained that Recticular Formation (RF) is located in the brain stem. It is an alternative pathway for impulses proceeding from the receptor organs to the cortex of the brain. These impulses from RF are of critical importance. It has been found that the arrival of specific sensory impulses in the brain is not sufficient for the conscious perception of the impulses in the absence of activity from RF. Wakefulness, thus, cannot be maintained without the integrity of the brainstem RF because in its absence, activation will not last longer than the actual stimulus. Thus the RF has a kind of arousal function which may be closely identified with 'excitation'. However, certain portion of the RF also provide an active kind of inhibiting
influence. This particular portion of RF is known as the recruiting system. The activity of this system corresponds very closely to inhibition.

Laszalo (1966) remarked that the sense modalities which can play a role in vigilance include exteroceptive and proprioceptive sensations. In the former group, visual, auditory and feedbacks are included while kinesthetic sensation is the relevant representative of the latter group. Dimond and Beaumont (1973) found that the left hemisphere in the brain was superior to the right hemisphere in detection. In general, experimenters in the field of vigilance have found that vigilance performance deteriorates with time. In fact, this decrement is the most common feature of vigilance (Mackworth, 1948; Broadbent, 1953; Adams, 1954; Andrews et al., 1956; Hohmuth, 1970; Siddle, 1972; Olmedo and Kirk, 1977).

It is the basic assumption now that everyone possesses a preferred attentional style, and that various behavioural tasks put certain situational demands on a performer's attention. Nideffer (1976b, 1981) has organised these situational demands into four distinct categories: broad-external, broad-internal, narrow-external and narrow-internal. To the extent that one's personal attentional style is congruent with the specific situational
demands of a given task, the more proficient one is likely to be in performing that task.

Another key element in Nideffer's theory involves the relationship between attention and competitive arousal (Nideffer, 1980, 1981). Three major changes in attention are proposed to occur as the level of anxiety increases. First, as arousal increases the athlete becomes locked into his preferred attentional style. As a result, he or she is unable to shift attentional focus from one type to another (e.g. from narrow-internal to broad-external) even when a more flexible attentional focus may be appropriate in a given time.

The second modification in attention occurs with the increase in the level of competitive arousal. In this case one's attentional focus begins to narrow involuntarily. As a result, the amount of information from both internal and external sources that may be processed and evaluated is greatly reduced. Clearly, performance will suffer to the extent that this excluded information contains cues relevant to the task.

Nideffer (1980, 1981) suggests the third, and, perhaps the most significant change in an individual's attentional focus under high levels of arousal. Here, the person, gets distracted by his own bodily feelings (beating
heart, muscle tensions) and his thoughts (why did the runners leave base, what's the matter with me, I might choke, and so on). The result of the distraction is that the performer became more focused internally. As attention is directed internally, the ability to concentrate on the game deteriorates.

According to Nideffer (1976a) sports may be classified by the type of attention they require, along the dimensions of width (broad vs narrow) and direction (internal vs external). These dimensions yield a 2 x 2 matrix into which Nideffer places different sport activities. He postulates that sinking a putt in golf requires a narrow-external focus of attention, whereas football line-backing requires broad-external, attention. Consequently, utilizing the wrong type of attention may lead to performance problems. According to Albrecht and Feltz (1987), the theory of attentional style, as proposed by Nideffer (1976a, 1976b, 1981), offers a parsimonious explanation as to how athletic performance may be related to one's predisposition towards a particular style of attention. Drawing heavily upon Easterbrook's (1959) cue utilization theory, Nideffer also provides an explanation for the relationship between individual anxiety level and attentional errors.

As per Nideffer's theory, at any particular point in time an individual's focus ranges somewhere along a
continuum between broad or narrow. At the same time one's attention is focussed in this generally broad or narrow manner, it is being directed towards either internal thoughts and feelings or external stimuli present in the environment. In addition, there is a natural tendency for an individual to spend an inordinate amount of time functioning within a relatively limited range along each of these two dimensions of attention. This personal inclination toward a certain focus of attention is frequently referred to as an individual's "preferred attentional style" (Nideffer, 1976a, 1976b, 1981).

Secunda and associates (1986), in their study "Psychobiomotor assessment of Football-playing ability", reported that visual abilities, including depth perception and peripheral visual acuity, correlate with athletic ability. Greater visual ability is directly related to the level of athletic skill (Graybiel, Jokl and Trapp, 1955; Low, 1946; Olsen, 1956; Pargman, Schreiber and Stein, 1974; Williams and Thirer, 1975). Football players scored the highest among all team sports participants on a visual perception task, indicating more field dependent skill (Pargman, Schreiber and Stein, 1974).

Gould et al. (1982) administered a psychological skills inventory to 49 wrestlers competing in the 1980
Big Ten championships. The findings revealed that self-confidence, maximum potential and use of attentional focussing were the most important variables separating the successful and unsuccessful groups.

Sandhu (1982) used Anfimov's Letter Cancellation Test to study top class volleyball players taking part in two different national competitions. He reported that there were differences among the players with respect to the time of the optimal vigilance and performance. There were three types of subjects with respect to the time of the display of optimal vigilance and performance. One may achieve the optimal level in the starting, in the middle phase, or in the last phase of the competition. He further reported that the pre-competitive arousal affects both the qualitative and quantitative aspects of attention. The speed of sorting out the information decreases. The errors with regard to task related to the persistence of attention increase, whereas the time taken by the subjects for the said task decreases.

Sandhu (1982) in his study "Selective Attention in Competitive Volleyball", tested 45 senior volleyball players, who had taken part in a national competition. He found that as many as 67 per cent of the master class players experience difficulty in concentration during
one competitive phase or another, whereas 33 per cent of them do not experience any such difficulty. There are specific types of errors related to attention in competitive volleyball and they adversely affect the tactical play of the team.

Sandhu, Mann and Brar (1987) using Wooden Falling Door Techistoscope, studied the phenomenon of attention as related to team and individual athletes. The sample consisted of 29 team athletes, 14 wrestlers and 24 track and field athletes (University level athletes). They reported that team players and wrestlers were found to be significantly better in span of attention compared to track and field athletes. The team players were found to be slightly better than wrestlers in the span of attention.

Puni (1960) experimentally confirmed that competitive stress (5 kms race and ski-races of 30 and 50 kms.) resulted in the deterioration of such psychological processes as time perception, memory and attention. In soccer, Gaegava (1959) associated the lowered level of "intensity and persistence of attention" with unfavourable factors during the competition.

Most of the studies dealing with the psychological characteristics of team and individual athletes have
come out with equivocal results. Some studies have shown that the more experienced athletes were significantly higher than less experienced athletes in traits such as extraversion and sociability. Others have found differences in personality traits depending on whether athletes belong to one sport or another. The interest in predicting successful performance seems to have spurred investigations of the psychological make-up of athletes. Specific athletic groups do seem to possess certain traits. However, the available literature is not conclusive enough to allow predictions of athletic success or failure.

Certain hypothetical issues raised in recent past in most of the studies have stated: (a) that individual athletes differ from team athletes on psychological parameters; (b) that athletes of different categories differ in their personality profiles; and (c) that athletes of combative and non-combative sports differ from one another.

The summary of literature concerning the psychological characteristics of individual and team athletes show that the findings and understanding based on them, are inconclusive and equivocal. It is this inadequacy that has prompted this researcher to undertake a detailed investigation to explore, in the Indian context, psychological characteristics of individual and team athletes.