CHAPTER II

REVIEW OF LITERATURE
The discipline of Sports Psychology is a comparatively new addition to the existing branches of applied psychology. The beginning of this field was marked by some theoretical assumptions indicating the possible application of certain well established psychological principles in the field of sports. Only after 1965, when the International Society of Sports Psychology was formed, systematic research started taking place in the field. Since then the sports psychology research has gained many significant directions. One such direction has been to study the effects of physical activity on the psychological functioning of the individuals who participate in athletic activities, at a professional level.

The following review of literature tries to elaborate as to how this area of research grew to its present status as a special field of enquiry in the area of sports psychology.

Ismail (1972) mentioned that "Ancient civilizations stressed the development of human qualities through the cultivation of the body and mind." Socrates stated that "even in the process of thinking, in which the use of the
body seems to be reduced to a maximum, it is a matter of common knowledge that grave mistakes can often be traced to bad health" (Van, 1953). Plato spoke of healthy bodies for healthy minds. During the seventeenth century Descartes, although he treated the individual as having two parts, namely, body and mind, yet he recognized the interaction between them. Rousseau considered the relationship between body and mind and stressed that they should be treated accordingly. He believed that in the education process if we want to cultivate the mind we must cultivate the parts which the mind governs, namely, physique.

In the nineteenth century, Wundt atomized the mind by reducing it to the elementary parts of sensations, feelings and images (Hall and Lindzey, 1957). Since then there have been continuous attempts to investigate the relationship between body and mind. Sherrington (1940) shared and elaborated on treating human organism as a unified entity by stating "The muscle is the cradle of recognizable mind." On the relationship between body and mind he went on to say, "recognizable mind seems to have arisen in connection with the motor act. Where motor integration progressed and where motor behaviour progressively evolved, mind progressively evolved."
Accordingly, body and mind are never independent; such subdivision is entirely arbitrary and unfounded. Although much remains to be learned about the brain and central nervous system, neurologists in general agree that the idea of two lives, somatic and psychic, has outlived its usefulness. Thus the psychosomatic concept of medicine recognizes this fact of biological integration and acknowledges its significance.

Hall and Lindsey (1957) expressed the feeling of the Gestaltists when they said: "The organism always behaves as a unified whole and not as a series of differential parts. Mind and body are not separate entities, nor does the mind consist of independent faculties or elements, and the body of independent organs and processes. The organism is a single unity. What happens in a part, affects the whole."

In the complexity of the relationship between body and mind the domain of personality is often included. Sheldon (1942) has contended that there is a parallel between his somatotypes and personality 'types' or there are two closely related temperaments, namely, body and
personality. Gratty (1964) points out that personality theories include physical activity as a part contributing to one's personality.

In summary, all propositions rest on the basic assumption that the human organism is more than the total sum of its parts. Breckenridge and Vincent (1955) provide an acceptable explanation of the 'integrated development' concept when they say:

"The individual consists of many parts which act in an integrated fashion. His intellect is related to his physical well-being; his physical health is sharply affected by his emotions; his emotions are influenced by school success or failure, by his physical health and by his intellectual adequacy. His growth - physical, intellectual and social - is product of his family history, his personal history, his current satisfactions and strains. His daily schedule affects all phases of his growth and in turn his growth affects his reaction to his daily schedule. What he accomplishes in school, in play or in any other
part of his living, is deeply and continuously affected by his physical health, by his intellectual adequacy, by his interest in his work or play, and by his emotional freedom to attend to school demands."

The age old concept of mind-body relationship with its implications in sports was brought to the academic front as long ago as the end of the 18th century when Kellor (1898) emphasised saying that the players do not play with their bodies alone but they use various mental processes also side by side. An year after, Anderson (1899) came out with his studies, in the effects of physical training on the psychological aspects like mental practice and transfer of training etc. Hall (1908) reiterated that physical education is not an end in itself but it is for the sake of mental and moral culture. It is to make the intellect, feelings and will more vigorous, sane, supple and resourceful. In 1912 a book written by a German author, Barth, examined the influence of participation in sports on willpower and character (Cratty, 1939). Vanek and Cratty (1970) have mentioned that in 1913 the founder of the Modern Olympic Movement, de Coubertin wrote a book entitled "Essays in Sports Psychology" in which he described sports as an aesthetic
expression as well as an educational tool for attaining better emotional balance. From Kellor's philosophical inferences made in 1898 to the scientific conclusions drawn by sports scientists in 1988 Seoul Olympic Congress, nearly a century has passed and the concept of the effect of physical activity, in this great duration has drastically changed its perspectives. Although the scientific outlook has changed remarkably, the principle of 'mind-body' relationship remains the same.

The present review of literature does not claim to be all encompassing but it tries to illustrate and elaborate the race of scientists through a few decades in unfolding and unraveling the threads of this significant area of sports psychology.

The early works of McCloy (1930) illustrated character development through physical education. He employed a bag of virtue approach in his research, attempting to isolate particular character traits and establish their susceptibility to the influence of physical education programmes.

Why some changes, take place in the behaviour of individuals after they undergo a physical training programme?
The answer to this question may partly be sought in the theories of learning proposed by Tolman (1934) who asserted that "Human behaviour is influenced to a great extent by learning." The individuals who vigorously undergo a systematic long drawn physical training programme, especially in sports, are required to learn those behaviour which are required to be successful in sports competitions. This learning process to attain success in sports, probably be instrumental in bringing about changes in the behaviour of athletes.

According to Dashiell (1935) the social situations through which the individuals pass for years have been found to be quite influential in changing the behaviour of human beings.

By comparing two groups of sports participants Sperling (1942) demonstrated the relationship between personality adjustment and achievement in physical activities. Blanchard (1946) in one of his studies found that over a 2-year period a sample population of 9th through 11th graders developed "desirable rather than undesirable traits" through physical activity experiences. He
observed that "girls demonstrated a significant superiority over boys in the acquisition of wholesome character and personality traits."

Leonard & Afflect (1947) quoted William Augustus, President, Amherst College that "If a moderate amount of physical exercise could be secured to every student daily, I have a deep conviction......that not only would lives and health be preserved, but animation and cheerfulness, and a higher order of efficient study and intellectual life would be secured." While proposing this idea he means to say that the involvement in physical activity would lead to certain positive psychological developments in the behaviour of individuals.

While studying the effects of a combative sport upon personality dynamics, Johnson & Hutton (1955) came out with significant changes in the behaviour of sportsmen which they attributed to their involvement in a particular type of physical activity.

Generally, the change in behaviour is due to conscious directed and voluntary engagement in some activity which
leads to the required level of motivation. The individual who is highly motivated towards achievement, takes more interest, gets more concerned with and involved in the goal directed activities which in turn pay him its dividends in various forms. In most of the competitive sports activities risk-taking is involved. As per the views of Atkinson (1957) there are number of determinants of risk taking behaviour which decide how much the individual will be able to persist in the threatening tasks at hand. And when the persistence is maintained the benefits are more likely to come. McCloy (1957) described various components of character which he found related to physical activity. Ryan (1958) also investigated into personality differences related to sports participation.

In 1960s many attempts were made to find out relationship between the personality traits and sports participation (Merriman, 1960; Werner, 1960; Cattell, 1960; Scott, 1960; Layman, 1960; Sommers, 1961; Harris, 1963; Takala, 1964; Tillman, 1964; Cagigal, 1965). All the studies have indicated that the involvement in physical activity brings noticeable changes in the cognitive, conative, and affective behaviour of the individuals. Some investigators further tried to explore the area for seeking the answers of such questions like: Is there any relationship between body-
build, motor educability and personality? (Lamb, 1966), whether personality traits are affected by participation in team games like football? (Johnson, 1966), whether motor activity has got any role to play in the mental and personality development? (Steinhaus; 1966, Warburton & Kane, 1966). These studies clearly affirm the personality factors attributable to sports and physical ability.

Johnson et al (1966) pointed out that there are a number of psychological benefits associated with the regular physical exercise viz., it leads to general feeling of well-being, discharge of tension, increase in relaxation, resistance to emotional stress, improvement in mental efficiency, development of leadership qualities leading to overall development of personality. Popejoy (1967) found decrease in anxiety of his subjects following a physical fitness programme. In finding out the causative factors underlying sports participation and behavioural changes in swimmers, Rushall (1967), came out with the well established theory of 'behaviour modification' on the basis of which the changes or modifications taking place in the personality of athletes due to participation in athletic activities, can be understood and interpreted.

Biddulph (1954) divided 461 high school boys into high
and low athletic achievement groups on the basis of the California Classification Plan. Then the two groups were compared on the California Test of Personality, Intelligence Quotients, High School Grade Averages, Teacher's Ratings of Social Adjustment, Scholastic Achievement, Attitude towards School, General Appearance, Grooming and Positive or Negative Traits which best describe the student. It was reported that the superior athletic-achievement group showed a higher mean score on the self-adjustment scale and the social indices on the personality test, and were shown to have higher grade point averages than their counterparts. Moreover, the upper group was rated higher on items of adjustment by teachers as compared to the lower group.

By using M.M.P.I., Slusher (1964) compared the personalities of various high school athletic groups with 100 non-athletes. The athletic groups were 100 Baseball players, 100 Basketball players, 30 Swimmers, 30 Wrestlers and 100 Football players. All athletic groups scored significantly lower on the femininity scale of the M.M.P.I. as compared to the non-athletic group. All athletic groups, except the swimmers were shown to score significantly higher on the hypochondriasis scale than the non-athletes.
In addition, the author reported that the football and wrestling groups tended to have a strong neurotic profile on the M.M.P.I., while the basketball group was reportedly the most deviant of all groups studied as they displayed an overconcern with physical symptoms and a relative lack of repression.

Gorder (1966) investigated the effect of an intensive twenty-day physical education programme on intellectual, physical and social development of mentally retarded children between 12 and 16 years of age. The criterion measures were the WISC full scale-mean-scores for intellectual performance, the AAHPER Youth Fitness Test for the physical performance and the Cowell’s Personal Distance Scale for social behaviour. The results showed significant gains on the intellectual, physical and social performance, especially between the training and control groups.

In one of the studies, Smart & Smart (1963) found significant positive relationships existing between Muscular Fitness and Emotional Adjustment. These findings were supportive of the conclusions drawn earlier by Barry (1961).
Ruffer (1965) compared the personalities and academic achievements of 50 highly active junior and senior high school boys with the same measures of 30 other junior and senior physically inactive boys. The personality measures used were fifteen scales of the H.S.P.Q. of Cattell while the achievement measures used were the General Intelligence Scale of the H.S.P.Q. and Academic Grade Averages. He found that the highly active subjects were significantly more sociable, enthusiastic and extraverted, but also more tense than their inactive peers. In addition, the active group had obtained higher academic averages and also scored higher on the General Intelligence Scale than the inactive boys. Reynolds (1965) also found the similar kind of relationship between physical and psychosocial aspects of subjects. Broekhoff (1966) came out with the findings that taller boys who had high physical strength tended to be rebellious, defensive and uninhibited.

Kane (1972) opined that......"an individual's physical (athletic) abilities are related to his personality structure. The environment in which physical abilities are displayed (e.g., in games and sport) constitutes an ideal setting for the development of desirable personality
characteristics such as confidence, sociability, self-reliance, cooperativeness and general personal adjustment."
The reviews done by Gofer & Johnson (1960), Warburton and Kane (1967), Ogilvie (1963) and Husman (1969) tend to give a personality description of the male athletes or physically gifted individuals in terms of Extravert Tendencies (such as high dominance, social aggression, leadership, tough-mindedness) and General Emotional Control reflected in such traits like low anxiety and high confidence. Women athletes are most often described as similar to the men athletes on the Extraversion dimension but for the dissimilar emotional control. There are of course, many exceptions to these general descriptions which have been reported and no doubt both the nature of physical activity or sport in question and the subjects' level of participation are in some way or the other reflected in characteristic ways of behaving. When the activity and level of participation are held constant, interesting consistencies in personalities have been demonstrated and evidence presented in support of the existence of certain sport 'type' for instance, a 'soccer type' (Kane, 1966), 'Wrestler' type (Kroll, 1967) a 'racing driver' type (Ogilvie, 1969) etc.

Views that participation in competitive sport will have a beneficial influence on the development of
personality have been expressed by Cagigal (1965),
Johnson (1966), Ogilvie and Tutko (1966), Clark (1967),
La Cava (1970), and Johnson (1974).

As opposed to non-athletes, athletes have been found
to be more sociable, dominant, extravert, confident, con­
ventional, mentally tough and emotionally stable (Alderman,
1974). These personality characteristics have generally
been directly or indirectly attributed to their involvement
in the athletic activities over a period of time (Carter
and Shannon, 1940; Sperling, 1942; Booth, 1958; Werner, 1960;

On the basis of scientific facts available Seaton
et al (1969) described physical exercise as the relaxing
activity for mind. They said "physical exercise improves
the mental tone of the individual. It assists in maint­
aining mental health. An interesting game takes the mind
off oneself and concentrates it on outward interests.
It also permits release of pent-up emotions through
socially approved channels. It provides opportunities
for self expression. It fulfils the wishes for new experience, security, response, recognition, and participation."

It is a means for developing confidence and obtaining the joys and satisfactions that come from a successfully completed psychophysical task. Later on Morgan et al (1970, 1971) and Tattersfield (1971) also explained the psychosocial benefits of sports participation in the same way.

Layman (1972) came out with the following propositions which outlined the possible causes underlying changes in behaviour which take place due to participation in sport activities.

1. Engaging in sports promotes physical fitness. Fitness is associated with good emotional health and a lack of fitness with poor emotional health.

2. The acquisition of motor skills involved in sports contributes towards meeting the basic needs of safety and esteem in young children of both sexes and in
boys and young men from the early grades through the college years.

3. Participation in play and sports presents potentialities for promoting emotional health and preventing delinquencies.

4. Clinical evidence from play therapy, group therapy and the use of physical exercise as psychiatric adjunct in the emotionally ill patients indicates that when play, recreational and athletic activities are planned with individual needs in mind, they may be very valuable means of improving emotional health.

5. Play and sports supply outlets for the expression of emotion, and outward expression of emotion in approved activities is conducive to the development and maintenance of emotional health.

6. Competitive sports, if properly used, may enhance emotional health and the acquisition of desirable personality traits.
Snyder & Spreitzer (1973), Orwin (1973), Morgan (1973) subscribed to the views expressed by Layman. In the same year Ismail & Trachtman (1973) found positive effects of progressive physical exercise training on psychological features like emotional stability, imaginativeness and self-sufficiency.

Nixon and Jewett (1974) opined that "...any form of education is going to have some effect good or bad upon the whole individual, regardless of how specifically it is aimed at a particular part of that individual. In view of these facts, physical education can no longer be looked upon as purely muscular training or "physical training." Every muscular movement sets up reactions which ultimately influence, in some measure, the whole living mechanism."

Bonanno (1974) also observed the personality changes following physical training. Buccola and Stone (1975) demonstrated positive effects of physical exercise on psychological characteristics of individuals. A pre-post two year follow-up study of 12 - 14 years old children conducted by Tattersfield (1975) indicated increased
Extraversion and reduced Neuroticism in the subjects. Based on his experiences and empirical evidence, Frost (1975) came to the conclusion that "sport certainly includes experiences which modify the human organism."

Coppage (1975) indicated changes in attitudes of athletes following long term practice of physical movements. Muller & Armstrong (1975) suggested that running (a physical exercise) can be used as treatment for reducing anxiety.

Emphasizing the effect of physical activity on personality Larson (1976) said "physical activity represents a medium for the individual and the group that has potentials for human development and adjustment. It offers a dynamic setting for the individual. The process itself has commanding effects on the human personality. The desire for success and respectable performance in activity is strong. It is highly motivating. This medium, therefore, has significant potential for social and psychological development and adjustment of the individual."

The "feel better phenomenon", which is a response
that participants in vigorous physical activity consistently report after exercise is frequently noted in the literature (Brunner, 1969; Morgan et al 1970; 1971; Roth, 1974; Burgess, 1976; and Harris, 1978).

Zaichkowsky & Smith (1978) noted that "...an individuals' personality gets affected by his movement. In other words, participation in certain forms of movement may alter or modify an individual's personality. Dance, play and recreation therapy programmes often subscribe to this theory. Children and adults are encouraged to participate in these programmes because of the positive influence movement experiences have upon self concept, mental health, and social adjustment."

The personality studies in relation to sports conducted by Young & Ismail (1976), Elsayed (1977), and Ogden (1977) further confirmed these views. In addition, Pollock et al (1978), Seeman (1978), and Dickerson (1978) found out the positive changes which take place in the emotional make-up of the individuals who participate in physical training and fitness programmes over a period of
time. Menze (1973) said "Active sport participation under certain circumstances is beneficial to one's health, that it also increases the feeling of well-being, and that it leaves one with a feeling of luck."

Why is exercise potentially beneficial in enhancing psychological well-being? Greist et al (1973) have tried to answer this fundamental question which lies beneath the influence of physical training on the psychological changes which take place in the sport participants. They have identified a number of factors that may help explain why vigorous physical activity is associated with the reduction of depression. These factors include; mastery, patience, capacity for change generalization, distraction, positive habit or "addiction," symptom relief, consciousness-alteration, and biochemical changes that accompany the activity. These factors (singly or in combination) most likely account for the enhanced psychological well-being which results from vigorous physical activity.

Bucher (1979) maintained that "many psychologists recognize that participation in athletics can contribute to personality development. Participation in athletic
activities provides chances of recognition, belonging, self-respect, feelings of achievement, as well as provides wholesome outlet for the drive of physical activity and creativity." Buffone (1980), Seefeldt & Gould (1980) presented the same views in their respective studies.

Folkins & Sime (1981) are of the opinion that the body appropriately utilized, can affect the mind in constructive ways. They further deliberate that current researches in the area of counseling, psychology, and medicine indicate that physical exercise can have a positive effect on mental health. Physically strenuous or aerobic exercises have proven valuable in reducing moderate levels of anxiety and depression, building confidence, reducing body fat, enhancing habit control, increasing body awareness and image, alleviating phobias, increasing productivity and improving sleep.

engaged in solely for physical benefits has been shown to have a positive effect on the psychological state of individuals in a number of diverse settings. For example, physically strenuous exercise is effective in improving the psychological functioning of individuals experiencing a wide range of problems.

Apart from the studies on the psychological effects of long drawn sports or physical training programmes, there have been number of attempts to explore the effect of Physical Fitness on mental well-being. Appenzeller (1981) reported behavioural alterations in endurance-trained individuals in terms of improved libido, heightened pain threshold and absence of depression. The findings of Mihelvic (1991) and Morgan (1991) were also in conformity with the above findings.

Tucker (1983) felt that physical fitness and its relationship to personality variables was characterised by positive and negative results. He believed that this inconsistency was due to narrowed definition of physical fitness used in previous studies to that of cardiovascular fitness. Therefore, he examined the relationship between strength measures and selected personality variables.
142 male physical education students beginning collegiate weight training classes were assessed on Tennessee Self-Concept Scale, the Eysenck Personality Inventory, and the Body Cathexis Scale during the first week of their training. The assessment made two weeks later revealed that the stronger males were much more satisfied with their body parts and were more socially outgoing than their less muscular counterparts. Trend analysis revealed significant curvilinear relationships between relative Squat Strength, Neuroticism and overall Self-Concept. The author attempted to explain the positive strength/personality relationship by way of body-cathexis or satisfaction scores. Because of the socially desirable feedback associated with the mesomorph, it was believed that a developing sense of confidence might be reducing the feelings of Neuroticism, Anxiety, Emotional Lability and so forth.

Bredemeier (1983) reported moral development in the individuals undergoing sports training programmes. Hayden and Allen (1984) like earlier authors found anxiety and depression reduction through physical exercises in their subjects. The findings of Buffone (1984) were also supportive of the results of this study.
The investigations in this area of research have covered number of psychological variables like Locus of Control (Jeffers, 1977; Blackinton, 1981), Self-concept (Johnson et al, 1968; Brown et al, 1982), Mood States (Gondola and Tuckman, 1983), Achievement Motivation (Jones, 1979; Henschen et al, 1982) etc.

Several researchers have focused their work on the effect of physical activity on mental health, psychological well-being or emotional health (Layman, 1972, 1973; Kukla and Pargman, 1976).

Apart from pointing out various psychological benefits of participation in athletic activities various investigators have explored the possible psychotherapeutic effects of physical exercise (Layman, 1973; Hill, 1979; Sime, 1981; Sinyor et al, 1982).

The conclusions drawn from these studies seem to be converging at one point that persistence in physical exercises over a period of time results in number of positive changes in the behaviour of the participants engaged in such activities.
There seems to be clinical agreement that a number of physical and psychological changes occur when an individual physically exercises at 75 to 80 per cent of his or her maximum cardiac output for 30 minutes, 4 or 5 times a week (Berger, 1984). These changes include improved mood, self-esteem, and work performance as well as increased cardio-vascular endurance and improvement in muscle tone, digestion, fat loss, and blood volume (Pollock, Wilmore & Fox, 1978; Folkins and Sime, 1981).

Bredemeier (1983) and Silva (1984) pointed out that participation in competitive sports can affect an individual's self-esteem, moral development and attitudes. He suggested that on the basis of recent innovative researches it can be concluded that participation in regular physical exercise can have a positive effect on psychological well-being and mental health.

Man and Hondlik (1984) reported positive changes in achievement motivation of his subjects who underwent compulsory lessons of physical training.

Bennett et al. (1985) studied effect of physical exercise on cognitive performance of the individuals
participating in an aviation research programme. The subjects of exercise group showed better cognitive performance when compared to the non-exercise group.

While studying the psychological consequences of an exercise training programme the findings of Katz et al (1985) supported the hypothesis that vigorous physical exercise can be a useful therapeutic strategy with the disabled.

Johnson and Koshes (1985) concluded that exercise decreases depression and anxiety and contributes to a sense of well-being.

Nideffer (1985) clearly brought out the benefits of sports participation and said, "...sports is the one situation in life that truly provides the opportunity for the pursuit of excellence through the total integration of mind and body. A business executive may perform quite well without a magnificent body. To achieve his or her full potential, however, the athlete must develop both." And there are enough evidences, which have been so far cited in the review of literature of the present study,
to comprehend the link between sports participation and physical, psychological, and social changes which take place in the individuals undergoing various sports training programmes.

Recent studies conducted by McGowan et al (1985), Taylor et al (1986), and Howden et al (1986) also showed that physical exercises helped in reducing anxiety and enhancing psychological well-being. Marsh et al (1986) studied the effect of sports participation on 351 participants ranging in age between 16 - 31 years. They were assessed on self Description Questionnaire in the beginning and at the end of the programme. Results revealed that the subjects' self-concept was enhanced after undergoing the sports training programme. An eight-week individualized exercise programme on 49 subjects also indicated increase in positive self-concept and decrease in psychological tension (Wilfley & Kunce, 1986).

Brown & Harrison (1986) found that strength training in fitness programmes for healthy mature women lead to increased levels of strength thereby, positively affecting their self-concepts.
Smith (1936) examined the self-concepts of 208 participants and nonparticipants in 3rd and 6th grade youth team sports from Urban, Middle, and Lower-Middle class backgrounds. Participants were found to be higher in self-concept than nonparticipants.

Schindler and Waters (1986) measured self-actualization differences using the Personal Orientation Inventory between sexes and different degrees of athletic involvement for 200 college students. Differences were found on all 6 scales used: Time Ratio, Support Ratio, Self-Actualizing Value, Existentiality, Self-Acceptance, and Self-Regard. It was generally found that women were more self-actualizing than men. Male athletes were significantly more self-actualizing than non-athletic males.

In order to determine the psychological benefits of exercise, the National Institute of Mental Health of U.S.A. convened a consensus panel which concluded that:

a) Short-term effects of exercise are associated with a reduction in stress emotions such as anxiety and
tension but are not necessarily associated with depression.

b) Long-term effects of exercise are associated with a decrease in depression in moderately depressed but not in normal individuals.

c) Long-term exercise is associated with a significant increase in self-esteem (A round table, 1937).

Recently a 12-month follow-up and pre-post analysis done by Doyne et al (1937) indicated development of feelings of accomplishment and enhanced self-efficacy in subjects. Fremont and Craighead (1937) found aerobic exercise helping in alleviating depressed mood. Suban et al (1937) found reduction in trait anxiety of their subjects following physical conditioning exercises. Balogun (1987) observed that more physically fit individuals, especially females, demonstrate better body image, enhanced self-concept and self-esteem when compared to the less physically fit females. Raglin & Morgan (1937) reported anxiety reduction through physical exercises. Positive effect of exercise on mood (Dyer & Crouch, 1937)
and enhancement in self-concept (Plummer & Koh, 1937) have also been reported. In fact the exercises have been seen to become so much part of one's life that if it is missed even for a day the individuals report feelings of guilt, irritability, depression and sluggishness (Crossman et al, 1937).

After reviewing literature related to exercise and well-being, Bhattncharya & Misner (1937) mentioned that exercise enhances the sense of well-being. This effect of chronic vigorous physical activity has been labelled as "feel better" phenomenon. Those who are physically active have been found to be scoring higher on psychological well-being.

More recently Spear (1933) compared the psychological and physical effects of four different physical conditioning programmes. The psychological variables included Motivation, Cohesion, Morale and Confidence. The four alternative physical conditioning programmes examined were: i) the U.S. Army's standard Army Physical Fitness Training, ii) the Manual Resistance Training System, iii) a Combat Obstacle Course and iv) Close Quarters Combat. The training programmes were spread over a period
of ten weeks and the 4 groups engaged in training were assessed at the pre and post levels. The close Quarters Combat Programme was found to be more effective in developing physical fitness and its positive effects were also more in the psychological variables of self-confidence, morale and cohesion.

Sorenson (1933) studied the comparative effects of exercise and psychotherapy on 34 diagnosed cases of anxiety disorders. The patients divided into two groups were trained twice a week for three months. Significant positive changes in state-anxiety, reduction of general anxiety symptoms and significant improvement in self-concept, were reported by the investigator.

Reider (1933) pointed out the utility of sports activities as therapeutic adjuncts. He discussed the possible psychological effects of sports therapy as increased self-confidence, less anxiety, better self-concept, increased well-being, and motivation.

Thill (1933) investigated the links between sport practice and possible modifications of personality traits.
A longitudinal study was conducted with 9 groups of sportsmen (rowing, basketball, gymnastics, weightlifting, swimming, ski, sailing, volleyball and judo) and a control group (no practice), the subjects were tested three times over a period of 27 months. The personality variables were assessed by the Thills' Sport Personality Questionnaire. The results showed number of influences exerted by sport on personality traits. For example, the sport of volleyball was found to be instrumental in enhancing emotional control and rowing increased the energetic control in the subjects.

Joan et al (1993) examined the effect of chronic and acute exercise on heart rate and cognitive and somatic state anxiety responses to a psychological stressor. Ten high physically active females and ten low physically active females participated in two experimental conditions, a single bout of exercise at 70% of the subjects' age predicted maximal heart rate and an attentional diversion condition. Acute exercise was found to be an effective means of reducing reactivity to stress when compared to attentional. Physical activity level did not correspond to an attenuation in physiological and subjective responses to psychosocial stress.
Number of studies conducted and points of views expressed in the recent past (Blumenthal et al 1933; Weinberg et al, 1933; Jasnowski et al, 1933; Simons and Birkimer, 1988; Brown and Siegel, 1988; DeBenedette, 1988) are indicative of the positive effects of physical exercises on personality traits, mood states and capacity to tolerate life stress.

Khan and Mohan (1988) assessed 79 track & field coaches varying in length of experience of athletic activities. The Eysenck Personality Inventory (EPI) scores showed all the coaches more or less similar in Extraversion, Neuroticism, and Social Desirability Scales however, when the less experienced coaches were compared with the more experienced coaches, the experienced coaches were found to be having slightly higher Neuroticism scores.

The aforesaid review of literature indicates that almost all researches done in this area seem to be reaching a conclusion that involvement in physical activity positively affects the psychological functioning of the individuals. However, there have been some studies which have clearly demonstrated no such changes in the indivi-
duals undergoing athletic activity programmes. The majority of studies relating personality variables and sports participation have enquired into characteristics of discrete groups of sportsmen or have been cross-sectional in nature and have not attempted to investigate changes over a long period of time. Clearly longitudinal studies are necessary for this type of investigation and several authors have expressed a desire that such investigation of personality development should be carried out (Cattell, 1960; Takala, 1964; Faulkner, 1967).

One study that did look into the possibility of personality change was conducted way back in 1968 by Kane. In one section of a larger study he compared the personality profiles of seventy-five physical education students at the beginning and end of their three year course in college. His conclusions were that no demonstrable change took place in the group as a whole, indicating within the limits of his study that no general personality change is linked with long term involvement in physical activities.

Werner and Gotheil (1966) investigated the effect of athletic participation over four years on West Point
Cadets, but found no evidence to indicate that athletic involvement affected the 16 PF structure of these young men. Rushall (1960) likewise could find no consistent personality change among participants in track and field, football and swimming over a period of three years.

Working within a social learning framework Kleiber and Roberts (1981) examined the impact of sport on the "prosocial" behaviours of cooperation and altruism and found that sport experience had a detrimental impact on the occurrence of prosocial behaviour. Furthermore, children, who were more experienced in competitive sports were significantly less altruistic than those who were less experienced, and boys were less altruistic than girls.

Rowley (1987) even went on to discuss possible negative effects that intensive athletic training may have on the growth and development of the young athlete. He examined various areas of concerns, including involvement of the entire family in the training, association of sports with the male sex role and negative stigmas attached to females in sports, the development of
antisocial or aggressive behaviour; delay in monarchy of female athletes, possibly associated with anorexia nervosa; detriments to educational attainment; risk of injury; and emotional problems resulting from pressure.

So far several attempts have been made abroad to screen out the effect of athletic training on the psychological make-up of the individuals. However, this type of research in the field of sports psychology has been sparse in India. Singh (1987) after reviewing literature in this area of research mentioned that some attempts have been made with a view to find out the effects of programme of physical education and sports on the personal and social adjustment of the participants of such programmes. A few studies have been carried out to reveal the effect of these programmes on the emotional behaviour and personality traits of the participants.

In one of the earlier attempts made in this direction, Gupta, Dhillon and Singh (1970) compared under-training-physical education teachers with the under-training general education teachers and found that the teachers under-going physical education training programme were lower on tension and anxiety and had higher social adjustment in comparison to the other group.
Lakshmi and Reddy (1973) after studying 30 national throwers concluded that Indian Throwers developed will-power through systematic training and their motivation was also found to be enhanced after training.

Mohan, Mall and Paul (1979) in an attempt to explore the relationship between personality and sports participation found that players had more extravert tendencies than the non-players. The study conducted by Kumar, Shukla and Thakur (1986) was also supportive of these findings.

Uppal and Singh (1934) found that the trained players had better psychological make-up when compared to the new entrants of the physical education programme. Malhotra and Khan (1984) and Khan & Khan (1985) compared well trained coaches with the less trained coaches and found that certain traits like activeness, dominance and confidence were relatively more in the experienced coaches. This fact may be attributed to their lengthy involvement in the training programmes.

Uppal and Singh (1985) have reported significant
positive changes in the self-concept of students who participated in an eight month regular physical education programme.

It is a well known fact that to become champion in sports one has to undergo a systematic and arduous training schedules. This kind of training allows the sport participants to develop positive psychological qualities required for particular athletic activities. In one of the studies Singh & Garg (1986) concluded that the sports champions had more emotional stability, self-reliance, confidence and self-esteem when compared to the non-champions. Talwar et al (1987) found that sports participation changed the attitudes of the women participants.

Thus, on the basis of the present review of literature it can be concluded that in general, the involvement in athletic activities brings about many positive changes in the psychological attributes of the athletic participants. However, some studies indicate no such changes. Moreover, there are some indications of negative changes also which might occur due to athletic participation. Keeping in view these facts, the present study is making an attempt to explore this area of research in India.