CHAPTER II
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COHESION

In an often-cited study by Schachter, Ellertson, McBride, and Gregory (1951), high-and low-cohesive groups were examined in a laboratory experiment in which the task involved cutting cardboard squares. It was observed that the high-cohesive groups conformed to the group norm more than the low cohesive group, independent of whether that norm was for high or low productivity. Subsequent research has confirmed these findings for industrial groups (Mikalachki, 1969, Seashore, 1954), military crews (Berkowitz, 1956), and in a laboratory experiment (Berkowitz, 1954). Thus, in athletic teams, a dual objective to strive for would be high cohesiveness and a high performance norm.

Miller and Hamblin (1963) in their review of the early research concerned with task structure, competition and co-operation, observed that performance was more effective for intra-group co-operation (as opposed to intra-group competition) in all of the experiments in which high means inter-dependent tasks were utilised. However, when low means inter-dependent tasks were utilised, performance was better in 14 out of 18 studies for inter-
group competition as opposed to intra-group competition. Thus, if the nature of the task is taken into account, the apparent discrepancy which exists in published research on the cohesion performance question, disappears.

Despite the findings of Essing and Viet (1970), there is no basis for assuming that cohesiveness was the mediating factor between team stability and team success. It could well be, that other factors associated with stability, such as having a better general knowledge of team's system, being more familiar with team-mate's skills and capabilities and/or non-participative contingencies such as being settled into and comfortable with the community at large, contributed to a more effective performance.

Martens and Peterson (1971) developed instrument to be employed in studies to measure cohesion, which is termed as the sports cohesiveness questionnaire. This tool is composed of questions about how respondents feel about individual to team interactions. Sub-measures included assessments of how much each team member feels a sense of belonging, how much enjoyment is experienced and how much task cohesion each individual feels. Portions of the questionnaire are, thus direct measures of cohesion. The other two components of the test are indirect measures of cohesion.

Gruber and Gray (1982) developed the team cohesion questionnaire using 17 items and sampling components of both
Melnick and Chemers (1974) used the sports cohesiveness questionnaire developed by Martens and Peterson (1971) and followed similar procedures, but reported no relationship between pre-season cohesiveness and team success. Not only have researchers sometimes failed to find a positive relationship, but significant negative relationships have been reported for high school basketball, (Landers and Luschen (1974), McGrath (1962) and Lenk (1977). The case for positive relationship is further weakened when one notes that many of the reported positive relationships actually represent mixed results, with positive relationships holding only for selected measures or certain times, within the overall design.

Anderson (1975) demonstrated that value similarity (typically associated with inter-personal attraction) was associated with cohesiveness in informal social groups, but goal path clarity (agreement on group task procedures) was more related to cohesiveness in task oriented groups. Thus, special measures and concepts of cohesiveness, developed through research with social groups, may not be relevant for sport teams. In sport teams, cohesiveness is not likely to be related to inter-personnel attractions, nor to any shared values, attitudes or activities that are not related to the group task.

Bakeman and Helmreich (1975) designed a study wherein
ten teams of aquatics were observed continually for 182 consecutive days while living and working in an underwater habitat. On the basis of the results, the authors concluded that a stronger case could be made for performance causing cohesiveness than for cohesiveness causing performance success. However, the applicability of the Bakeman and Helmreich findings for sport and physical activity is questionable for at least three reasons (Carron & Ball, 1977). Firstly, that the isolated, restricted and highly structured working and living environment utilized, coupled with the length of time spent in that situation, represents a unique experimental situation, unrelated to anything in sports. Secondly, they defined cohesion as 'time the members of the aquatic team engaged in conversation during their leisure time'. The nature of the experimental environment, coupled with the fact that the aquanauts were under continual observation, provided for this unique behavioral assessment of cohesion. It would be literally impossible to obtain an equivalent measure with most of the sport teams, but even if it were possible, it is doubtful that the social-interpersonal measure of 'time engaged in conversation' could be linked conceptually with performance effectiveness. Third reason is the operational definition used by Bakeman and Helmreich for performance, i.e. the percentage of time engaged in work relative to the total time under observation. As Bakeman and Helmreich themselves
pointed out, there is a possibility that this measure ‘taps not the performance, but something far simpler, more plodding, and more mundane - the passage of the time accompanied by the motions of work’. In sports, the assessment of performance is not only easier to obtain for a sport team, it is also more objective.

McClendon and Eitzen (1975) examined various inter-social contact situations that might reduce tension and increase the chances of team success of college basketball team.

Zander (1976) presented a series of propositions and hypotheses dealing with recruitment and removal of group members, and some of these are directly applicable to the issue of cohesiveness. He proposed that as the cohesiveness of a group increases, the tendency to remove unattractive members is stronger. With a strong sense of group unity and integrity, a group becomes more sensitive to the potential threat that unattractive individuals represent. Conversely, group low in cohesion are more tolerant of unattractive group members. He also proposed that the tendency to remove an unattractive member decreases if the removal is potentially harmful to the group itself (i.e. by producing conflict between the individual’s supporters and those who wish to remove him from the group) or if the removal decreases valued contribution made to the group.

Carron and Ball (1977) conducted a study on the
athletes in which 12 inter-collegiate ice hockey teams were tested with the sports cohesiveness questionnaire in the early, mid and post-season and the stability of individual differences in the seven measures were examined. From one immediate test period to the next i.e. early-season to mid-season and mid-season to post-season, all seven individual measures evidenced a relatively higher stability. However, when the early season cohesion measures were correlated with the post-season measures, only three measures (friendship, power influence and value of membership) were of significant magnitude to be statistically significant. In short, individual differences which were present in early-season in the two individual to individual measures and one individual to team measure, were not greatly influenced by a season of competition. Individual differences in these three attraction measures were established early in the season and they remained stable. On the other hand, during tenure of that season, individual differences in the degree of enjoyment, sense of belonging, closeness and team work changed markedly and there was no stability in these attraction measures. Presumably, the different levels of success and failure experienced throughout the season produced marked changes in these measures.

Carron, Ball and Chelladurai (1977) examined the effects of individual orientation (task, self and
affiliation motivation) and team success in intercollegiate hockey on satisfaction with individual and team performances. Differences in success and individual orientation did not have any effect upon the level of satisfaction expressed with individual performance. However, in a finding consistent with that reported by Martens (1970), team success for an individual, with increased levels of task motivation, led to heightened levels of satisfaction with team performance.

Schlenker and Miller (1977) have proposed that attributions to the self and to the team are also influenced by the group's cohesiveness. In highly cohesiveness teams, the solidarity means that an attribution to the team should be highly similar to the self-attribution. On low-cohesive teams, however, there should be a marked discrepancy between the team and the self. That is, following success, an individual would assume more credit, following a failure, an individual would attach more blame to teammates. In short, individuals on low-cohesive teams would not be as "fair".

Bird, Foster, and Maruyama (1980) obtained support for this viewpoint with sport teams. In a study of female inter-collegiate, varsity basketball teams, they found that "under conditions of failure, members of highly cohesive teams acted in a manner that would preserve positive feelings toward the team and left the door open for a change
in future outcome. Under the same negative circumstances, players on teams with low cohesiveness did the opposite. Tropp and Landers (1979) initially determined the interaction channels (defined by passes to teammates) in inter-collegiate field hockey teams and then examined their relationship to leadership and interpersonal attraction ratings. They found that the low-interacting group was higher in leadership and attraction than the moderate and high-interacting groups. As the most dramatic example, the goalies initiated and received the least number of passes and had the lowest ranking in total interaction, and yet they received higher leadership and attraction ratings than any other position. Tropp and Landers, in summary, pointed out that these "findings suggest that the nature of the task, rather than high interaction, is the primary factor for explaining the emergence of leadership and attraction on field hockey teams..... Task independency of field hockey goalies (reaction, blocking shots, kicking clears) is critical in leading to the high respect and popularity attained by individuals occupying this position."

Bass (1980) has stated that the conduciveness of homogeneity or heterogeneity within the group membership to team performance depends upon the variables on which the members are the same or different and the nature of the task. For example, if the task is a simple one and a variety of resources are not essential for performance success -
stuffing envelopes for mailing, for example --- then the homogeneous team is likely to be effective independent of whether cliques develop, members differ in ability, and so on.

In situations where the group must work in a chain, then the total chain depends upon the adequacy of each link, that is, in sport, relay races, the tug-of-war, and rowing events. Bass suggested that "again homogeneity is favoured, for the group is no better than its poorest member. The chain fails if one link fails". The relevance of this conclusion for sport might be questionable, however, because four "homogeneous" plodders would be certainly hardpressed to defeat two plodders and two Olympic sprinters in a relay. Finally, according to Bass, heterogeneity should prove to be more beneficial when the task is complex, when no individual alone has the varied resources necessary to deal with the complex problem.

Defiore and Kramer (1982) studied the effect of team affiliation on the perception of sports. 60 female high school students participated in a study designed to determine the effect of social-psychological factors on perception in sports. The subjects of each of the three schools were randomly assigned to one of the two conditions. The instructions in objectivity conditions (NIO) required no manipulations, in that, the subject's affiliations, as
indicated by the pre-test questionnaire, were not supplemented by instructions. 'The instructed objectivity' conditions (IO) however, attempted to manipulate the subject's affiliation by supplementing the direction with the statement of the possibility of bias, accompanying affiliation and instructing the subject to be objective in an attempt to improve their perceptions. Three dependent variable measures were collected and analysed. The result of the study distinctly provide evidence for the functioning of social-psychological factors in the realm of sports. Such findings are of a value as a contribution to the knowledge surrounding social perceptions by providing systematically collected data in the area of sports where there has not been collected data in the past. Among all the three dependent variables, the school affiliation factor was found to account for differences in subject's perceptions. The affiliated team more frequently received the favorable decision when compared to the control group.

Carron et al. (1985) developed an instrument to assess cohesion in sport teams. The purpose of the study was firstly, to demonstrate the need to develop an instrument to assess group cohesion, secondly, to outline conceptual model of group cohesion upon which such an instrument could be based, thirdly, to outline the four projects conducted to obtain the construct related information and to develop an initial version of the G.E.Q. and the final purpose was
to outline the reliability and validity of studies conducted with two different sport team samples. A total of 234 respondents from a variety of sport teams were the subjects. The most consistently appearing responses were tabled, taking care to analyse the subjects on their wording, then coded accordingly as to whether the responses concerned one of the four constructs. In all, there were four projects. The responses from the four projects were used to form a response pool representing information concerning the four constructs. On the basis of the various statistical operations required to construct an instrument, 18 items version of G.E.Q was found consistent and reliable. Cross studies and content - valued - factor analysis with oblique rotation revealed preliminary evidence for construct validity. The G.E.Q comprised four scales, reflecting the constructs of 'Group Integration - Task', 'Group Integration - Social', 'Individual Attraction to the Group - Task' and 'Individual Attraction to the Group - Social'.

Phillips(1985) conducted a study of sports group behaviour and official's perception, the percentage of negative behaviour was exhibited towards male basketball officials, by crowd, coaches and players at Ottawa High School. For girl basketball game officials perception of negative behaviour exhibited towards them, 15 girls high school-varsity basketball games were observed and 5 trained observer related behaviours of each sport sub-group, crowd,
home coaches, visiting coaches, home players and visiting players were observed. It was concluded that sport subgroups, crowd, coaches and players in Ottawa High School girls basketball behaved generally non-negatively toward officials. Crowd, however, did behave significantly more negatively than did coaches or players. Officials did not perceive behaviour exhibited by crowd, coaches and players nor did they evaluate their officiating ability based on the reaction of crowd, coaches and players. Officials seemed to have a pre-conceived notion as to how crowd, coaches and players would behave towards them and evaluate their officiating ability. The results seemed to represent an official's expectations of behaviour and evaluation of officiating ability rather than actual behaviour or evaluation of officiating ability by crowd, coaches or players.

Brawley et al. (1987) assessed the cohesion of teams and examined the validity of the G.E.Q (concurrent, predictive and construct). In study one, subjects were 74 male and female athletes from 10 university teams and individual sports. Each team included a mixture of freshmen and senior students. Teams were assessed at different points during their season, thus avoiding a seasonal response bias. In study two, there were 247 athletes from 12 male and 14 female teams. Out of these 26 teams in total, 16 were from
individual sports, while 10 were from team sports. Teams varied in tenure of their membership. In study three, there were 117 subjects from 10 team sports. The results of study one, indicated that the G.E.Q exhibited the predicted correspondence with similar measure of cohesion and was not significantly correlated with measures of other constructs. In study two, the G.E.Q successfully discriminated team and individual sport athletes by predicting their membership to these groups on the basis of their task cohesion scores. In study three, evidence was obtained for the predicted difference in self response attributions between high and low task cohesive athletes of team sport. The conclusion was that the G.E.Q was valid.

Pease and Miller (1989) conducted a study of team cohesion and athletic performance. The purpose of this study was to evaluate between team cohesion and athletic performance in the case of University men's basketball teams. It was hypothesized that there would be positive linear relationship between cohesion and performance success. A four step evaluative procedure was applied to examine the relationship between cohesion and performance. The first three steps were completed concurrently. In the fourth step, the overall relationship between cohesion and performance, relative to the information obtained in the first three steps, was assessed. The results indicated that the high degree of social and task cohesion
present throughout the season made a positive contribution to practice and competitive performance, while high levels of cohesion enabled the team to exceed its initial goals. The elevated social cohesion contributed to team's ability to attain higher levels of excellence later in the season. Competitive task focus appeared to vary in relation to the opponent and importance of the game.

Carron, Brawley and Widmeyer (1990) conducted a study relating to the impact of group size in an exercise setting. Two independent studies were conducted to examine the group size in an exercise setting. In the first archival data from 47 exercise classes was used to examine the relationship between the group size and behaviour. The second study examined the relationship between the size of classes and specific social psychological correlates of group size, including the participant perceptions of conspicuousness, quality and quantity of interaction with their leader, the opportunities to interaction, the level of crowding and density and the satisfaction. The results of the first study revealed that attention and retention were high in small and large exercise classes but reduced in medium and moderately large classes. This indicated that the relationship between behaviour and group size was curvilinear. In the second study also, one way ANOVA and trend analysis using orthogonal polynomials was computed for each dependent
measure. This approach provided insight into whether the relation between group size and some of the psychological correlates was linear, quadratic, or cubic. Tukey B Post Hoc Test was also used in all cases of significant trends. The result of the second study also showed a curvilinear relationship between exercise class size and participant's perceptions of the opportunities available for social interaction and feeling of crowding and density. Both the small and large classes were perceived more favourable than the medium classes. The relationship between class size and perception of the instructor as well as the level of satisfaction experienced were linear, positive and perception decreased as class size increased.

Spink (1990) examined the cohesion/efficacy relationship. Specifically, it was hypothesized that volleyball teams, high in collective efficacy about impending encounter, would be more cohesive than teams that were low in collective efficacy. These teams, high in collective efficacy could score higher on the task scales of the G.E.Q., especially, individual attraction to group-task (Widmeyer, Brawley and Carron, 1985). The subjects for this study were 92 volleyball players participating in the open (N = 53) and senior division (N = 39) of the Annual SuperVolley Tournament held at a major University in Canada. Subjects were selected from both the men's and women's section of tournament. To assess team cohesion, the four
scale Group Environment Questionnaire developed by Widmeyer et al. (1985) was used. A stepwise discriminant analysis was used to determine which cohesion scores contributed to a function that would predict classification of high and low collective efficacy of elite volleyball players. The result of analysis revealed a highly significant difference between high and low collective efficacy players participating in the open division $x^2 (2, N = 53) = 18.06, p < .001$. Two of the four cohesion scales contributed to the significant differentiation between the groups: ATG - T and GI - S. Post Hoc univariate FS conducted on each variable, that contributed to the discriminant function classification, revealed that both ATG - T, $F(1,51) = 14.53, p < .001$, and GI-S, $F(1,51) = 7.80, p < .01$, contributed significantly to the differences between high and low collective efficacy elite players. The mean values indicated that both ATG - T and GI-S were greater for team members who were high in collective efficacy. The result supported the conclusion that specific measures of group cohesiveness were positively related to collective efficacy for elite volleyball team but not for recreational teams, with the high collective efficacy teams rating cohesiveness higher. This suggests the need for future research to address the cohesion/collective efficacy question from a comparative perspective.

Sandhu et al. (1991) conducted a study to assess cohesion in sports teams. The group environment
questionnaire (Widmeyer et al. 1985) was used. The purpose of the study was to develop the norms of G.E.Q to make the instrument available for the use to the Indian researchers. The study was also aimed at finding gender differences in the various parameters of cohesion. The sample consisted of 230 athletes (male and female) representing at the inter-university and national competitions. The subjects were from the games of basketball, handball, football, hockey, volleyball and athletics. They were required to respond to the four sub-scales of the G.E.Q. Hull scale was used to construct the norms and 't' test was used to find out the gender differences in various parameters of cohesion. The results demonstrated significant differences between male and female athletes in all the sub-scales of the G.E.Q. The male athletes demonstrated more cohesion in all parameters as compared to the female athletes. Norms were found different, compared to the North American standards.

ADJUSTMENT

Ikegami (1970) studied the personality changes in athletes. He discussed the length of social experiences and personality changes. He compared a group that had 9 to 10 years experience, with another group having 1 to 2 years experience. He found that the more experienced group was significantly higher than the less experienced group, in extroversion, rathymia (carefree), general social ability
and social leadership.

Kistler (1957) compared 116 college-varsity male athletes with 116 non-varsity athletes. He found that the varsity players demonstrated poorer sportsmanship than the non-varsity players. His findings are also supported by Richardson (1962).

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 the personal, social and total adjustment of selected high school seniors. The study revealed that: (i) other things being equal, a person who is well adjusted, tends to have good health behaviour, (ii) other things being equal, a person with good health behaviour tends to be well adjusted, and (iii) there existed relatively higher relationship between low health behaviour and low total adjustment.

Antonelli and Mascellani (1973) conducted a study on adjustment of 351 Italian top athletes. He used the Bell's Inventory of adjustment. The results were: (i) Adjustment was better in athletes than the control group, (ii) male athletes were better adjusted than females athletes, and (iii) sports where athletes seemed to have a better adjustment were, athletics, volleyball, sailing and fencing. The sports in which adjustment was found poor were cycling, rowing and gymnastics.
Vayer (1973) conducted a study on the problems raised by maladjusted adolescents. According to him, it is the behaviour which sets some of them outside the normal standards. Thus the behaviour of the subjects has been analysed in a descriptive manner in this study. The sample comprised 12-13 year old 15 children (8 boys and 7 girls). Subjects of the study belonged to the under-privileged social cultural milieu with anarchic behaviour and extremely diverse academic level. To begin with, he gave the boys group 25 minute session including a wild activity, concerted action and relaxation, and as a result children were found calm as never before. A month thereafter during sports session, football game was organised with repetitive activity during which the adolescents organised the activity, with no outside guiding authority and only suggestions were made. After the sessions, he found (i) a rapid change of behaviour, (ii) the acceptance of dialogue and reflection upon the action to be taken, and (iii) the inclusion of the child who had been left out of the game. The researcher found two other complimentary aspects of physical education for rehabilitation of maladjusted adolescents. Firstly, that it leads the adolescence to recognise and think about himself, and secondly, it leads them to recognise others and to associate themselves with others in collective activity.

Aventi (1976) administered the Washborn Social
Adjustment Inventory to 244 male and female college freshmen enrolled in activity courses at the College of the Ozarks M. in 1964. The mean gains were then compared to determine whether there was any difference between the gains made in the adjustment levels of the co-educational classes over the segregated classes. The 't' test for difference between independent means, was the statistical tool used to make the comparison. The following conclusions were arrived at: (i) Co-educational and segregated classes in physical education did not differ significantly in contributing to the adjustment of college freshman, (ii) in the segregated classes, males and females did not differ significantly in the gains made in the adjustment, and (iii) in co-educational classes, males and females did not differ significantly in the gains made in adjustment.

Hatfield (1978) conducted a study with regard to effects of interpersonal attraction and tolerance-intolerance of ambiguity, on athletic team productivity. This study was concerned with identifying the effects of interpersonal ambiguity, on actual productivity (win-loss proportions) in selected sports activities. One hundred and fifty physical education students (male) were randomly assigned to sports teams and on the basis of their responses to Budner's (1962) Scale for intolerance of ambiguity, were divided into two groups of each sport team comprising
subjects who reported the scores as tolerance of ambiguity (T.A.) who competed against a team comprised of subjects who reported themselves as intolerance of ambiguity (I.A.). Suezek and Laforge's (1955) inter-personal checklist was responded to in an attempt to determine whether differences were present between IA and TA teams with respect to how each team member perceived his team and as to how each team member perceived his mates. The absence of any significant differences in this regard was suggested to have been caused by a general reference being made to a stereotype image of an athlete. As hypothesized, T.A. team's actually productivity was found to be greater in sports where inter-personal co-operation was not seen as a necessary condition for success, but where such co-operation was necessary, T.A. teams fared poorly. Conversely, team comprised of I.A. subjects performed better in highly attractive team sports and not so well in non-attractive (individual) sports. The results were significant between I.A. and T.A. teams in win proportion in wrestling (t=1.96).

Morgan and Johnson (1978) using MF1 found that successful athletes possessed more desirable social traits than the unsuccessful athletes.

Maxeiner (1983) conducted a study on volleyball players. The statistical interpretation of the data revealed: (i) Volleyball players are more extrovert than the
normal population but showed no difference in respect of neuroticism. (ii) higher level players are emotionally more stable than lower level players, (iii) set-up players are emotionally more stable than the attackers, and (iv) On high performance level, set-up players are more extrovert than the attackers.

Sharma (1984) using the Cattell's 16 PF questionnaire reported that personality factor E⁺ (aggressive) had been retained by basketball, football and volleyball sports groups except hockey sportsmen. Similarly, 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 groups. Q3⁺ (socially precise) appeared in the personality structure of football, hockey and volleyball sportsmen. Group dependent factor Q3⁻ emerged in the personality profiles of basketball players. He had also found the sportsmen representing univarsity as emotionally stable, aggressive, conscientious, trusting, practical and group dependent.

Daino (1985) carried out a study on a sample of 132 subjects with 66 tennis players (36 males, 30 females), and 66 non players (36 males and 30 females) from otherwise similar characteristics. EPQ (Eysenck Personality Questionnaire) Middlex Hospital questionnaire and will to win questionnaire were administered. The obtained result
indicated that the comparison groups differed from each other on a number of personality traits. In general, tennis players scored significantly higher in extroversion and will to win and exhibited a lesser degree of neuroticism (emotionally unstable), anxiety apprehension, obsession and depression.

Singh (1986) identified some psychological differences between champion and non-champion boxers of All India Inter University level. The sample consisted of 33 champion and 33 non-champion boxers who participated in All India Inter University Boxing Championship held at Haryana Agriculture University Hissar. The Cattell's 16 personality factors questionnaire was employed to evaluate the personality characteristics of the players. He found, among others, that the champion boxers were emotionally more stable, less depressive, unfrustrated, socially bold and self sufficient.

Singh, Garg and Debnath (1987) compared national women gymnasts and non-sportswomen to study their personality characteristics. The Cattell's 16 PF was administered to national women gymnasts (N = 12) and non-sportswomen (N=12). It was concluded that national women gymnasts were more outgoing as compared to non-sportswomen. National women gymnasts were similar to non-sportswomen in emotional stability.

Kumari (1988) conducted a study with regard to the
adjustment of sports and non-sports school girls of Himachal Pradesh. The sample consisted of 600 students (300 sports and 300 non-sports girls). She used 'Sinha and Singh's (1984) adjustment inventory for school students. She found that sports girls belonging to rural and urban areas were better in all variables of adjustment i.e., emotional, social and educational than non-sports girls. There were also significant difference between rural and urban girls in emotional, social and educational adjustment. The rural sports girls were found to have better emotional adjustment than the urban sports girls. In social adjustment, the rural girls were also found better as compared to the urban girls, both in the sports and non-sports groups. However, in educational adjustment, the urban girls in both the groups were found better than the rural sports girls.

Fortgalland (1988) conducted a study on health condition and temperament before and after physical conditioning programme. The purpose of the study was to assess the strength endurance training on health condition and temperament of athletes specializing in different sports disciplines. The subjects were the students of professional course in coaching at NIS, South Centre Bangalore. They were from track and field - 27, volleyball - 16, hockey - 18, handball -16, lawn tennis - 5, kho - kho and Kabaddi - 28 and cricket - 11. The test used was a seven point bi-polar profile constructed by Mathesius
The results indicated that after the strength endurance training, track and field athletes, kho-kho and kabaddi player's had shown the negative change in health conditions to a significant level. In other disciplines, they had shown positive change but not significant.

Singh, Nasib (1988) investigated psychological characteristics of athletes in team games and individual events. The psychological variables included the adjustment variables ie, home, health, social, emotional, educational and total adjustment. The sample consisted of 202 athletes (88 individual and 114 team athletes). The athletes were attending the coaching camps in various games to participate in All India Inter – University Competitions. The adjustment inventory of Sinha and Singh (1980) was used along with some other personality measures. The finding of the study were that individual and team athletes did not differ significantly on various areas of adjustment except educational adjustment, where the difference was significant. Significant inter-sport differences were found on all areas of adjustment. The successful athletes also differed significantly from unsuccessful athletes in all areas of adjustment.

Alegaonkar (1989) conducted a study of self-concept, emotional, social and educational adjustment and physical fitness. The purpose of the study was to study self-concept, adjustment and physical fitness. 62 boys in the age group of
12-14 years were tested for self-concept and adjustment. Chi-square were derived of various factors of adjustment, various factors of physical fitness and total physical fitness index. The results indicated that self-concept correlates to some of physical fitness variables. The factors of adjustment and the general adjustment did not correlate with the factors of physical fitness index. The main conclusion was that though the physical fitness and self-concept are highly correlated, yet the adjustment is not correlated significantly with them.

Gill (1990) studied socio-economic status, adjustment and creativity of successful physical education teachers. She gathered responses of 617 physical education teachers from different secondary schools of Punjab. The perception with regard to teacher’s success were that of the heads of the institutions. 'The teacher adjustment inventory' by SK Mangal (1982), the socio-economic status scale by Shrivastava (1978) and the Torrance's (1966) thinking creativity test were used. She found significant differences between successful and less successful teachers on different adjustment variables. Her conclusions were that male physical education teachers were better adjusted and more original than female physical education teachers. Physical education teachers from government schools excelled private school teachers on variables of adjustment, socio-economic status and creativity. Similarly, successful physical
education teachers were found better in socio-economic status, creativity and adjustment than less successful teachers. The regression equation results demonstrated that adjustment was positively and significantly related to creativity, and adjustment could be a predictor of creativity.

Yadav (1992) studied selected personality variables, adjustment and socio-economic status of mass and class athletes of college and university levels. The sample consisted of 200 mass and 200 class athletes selected randomly from five Universities of North-West India. The events included basketball, football, handball, volleyball (mass sports), cricket, badminton and lawn-tennis (class sports). Cattell's 16 PF questionnaire (1962), Sinha and Singh's adjustment inventory (1980) for college students and the socio-economic status scale by Gyanendra P. Srivastava (1982) were used. Analysis of variance (ANOVA) was computed on different variables. The results indicated that mass sports athletes performed significantly better than class sports athletes on adjustment variables ie, health, social emotional and educational. The results with regard to successful and non successful categories of athletes have not been found significantly different on adjustment variables except on health adjustment. The results, with regard to adjustment of different groups of athletes, indicated inter-group differences on various sub-scales of
adjustment. The handball and the basketball groups were found better adjusted than all other sports groups on home and health adjustment respectively.

Sports Achievement Motivation

Bhushan and Aggarwal (1978) conducted a study of personality characteristics of high and low achieving Indian sports persons. Cattell's 16 PF questionnaire was administered to 10 high achieving Indian table tennis and badminton players who had represented India at International level and to 10 low achieving players who had never achieved any distinction in their respective games. The high achievers scored significantly higher than their low achieving counterparts on dominance and emotional stability amongst the primary factors. On the second order factors, outstanding sports persons were significantly more extroverted than the low achievers. Contrary to the expectations, there was no significant difference in intelligence, ego-strength, self-sufficiency, tenseness and anxiety between high and low achievers. High dominance is perhaps one of the chief proofs of the international sports persons, who must persist and master skills and techniques. Being more extroverted than low achievers, the outstanding sports-persons have higher thresholds for arousal, and thus they are able to endure hard physical training programmes. They are also able to handle higher levels of arousal caused
by intense competition and usually higher vociferous spectator reactions before their performance deteriorates. The outstanding sportswomen, compared to sportsmen in general, scored significantly higher on the primary factors of dominance, suspiciousness, tenseness and lower on outgoingness, emotional stability and tendermindedness. On the second order factors, the sportswomen were significantly more anxious, alert, poised and independent. Perhaps the outstanding women players were more dominant and independent than the outstanding men players because they have to break through the stronger barriers of customs and traditions to compete in the man's world.

Dunleavy and Rees (1979) investigated the effect of achievement motivation and sports exposure on the sports involvement of American collegiate males. The purpose of this investigation was to determine the effects of achievement (n. Ach.) and previous sports exposure upon current sports involvement. Sports involvement was conceptualised as involvement in, (a) either competitive or recreational sports, and (b) either individual or team sports. Sports involvement was assessed through combined measures of preferences for actual participation in sports. Two groups of male under graduate volunteers, 54 high n. Ach. and 80 low n. Ach. were categorised into high, moderate and low exposure groups, based on previous sports exposure. The n.Ach. was measured by the Mehrabian achievement scale
(1969). Analysis of data indicated that (a) high n.Ach. was related to competitive and individual sports involvement, (b) previous sport exposure was related to competitive sports achievement, but unrelated to individual sports involvement, and (c) n.Ach. and previous exposure were independent rather than inter-active predictors of competitive sports involvement. These results were, thus found significant.

Lefevre (1979) conducted a study of achievement motivation and causal attribution in male and female athletes. The subjects included 15 male and 15 female athletes who were candidates for the Montreal Olympic Games 1976. The athletes were runners, swimmers and gymnasts. The first objective of the study was a search for item of achievement motivation in top class male and female athletes. The second objective of the study was to deal with the cognitive attribution of athletic performance to the underlying cause being ability, effort, task and luck. As predicted, ability and especially, effort were considered as the primary causes for good achievement, while lack of effort and bad luck were important attributions for bad achievement means. The third objective of the study was to explore the possible links between the achievement motivation and the cognitive attribution process. Among other things, high achievers, more than low achievers were found to attribute their success internally. The results
further indicated that female athletes obtained higher score on intrinsic motivation while the opposite was true on the positive fear of failure.

Hosek and Man (1981) conducted a study of achievement motivation training of physical education teachers in Czechoslovakia. The experiment included 4 comparable homogeneous study groups (\( N = 80 \)). Two groups, experimental and control, were used. 37 students went through motivation training consisting of 12 training units, each lasting 19 minutes and carried out with one week interval. The training was carried out on the basis of Lin Hart's functional system of activity and the model of active social learning. Achievement motivation was tested with the use of McClelland's (1953) and Hechhausan's (1963) methods. The data was given the statistical treatment (ANOVA). The results showed significant increase in achievement motivation after the termination of motivational training in experimental group. When experimental group was compared with the control group, they showed person's behaviour as well as factual significance of observed differences. A significant decrease in achievement motivation was observed in the experimental group after the termination of the training. The results can be interpreted as relative increase in achievement motivation of the experimental group as compared to the control group.

Blais (1982) conducted a study of achievement
motivation on basketball players. The purpose of the study was to verify the validity of the assumption that participants perceived winning and losing, as success and failure, and to identify the meaningful responses of the target population. Open questionnaire was administered to 216 male and female inter college basketball players in the Quebec Province. The results indicated that they exhibited wide variety and exceptions of success and failure, and that equating the winning and losing, with success and failure may represent an erroneous assumption. The most frequent responses to personal success and team success were, pride, while for personal failure and team failure discouragement was most frequently evoked.

Nault (1982) investigated the effect of achievement motivation on risk taking behaviour and motor performance. The purpose of the study was to examine the decision making process of individuals performing a motor task within the construct of an achievement motivation situation. The thesis advanced by the investigator was that the conditions of the achievement setting created in task studies, were dissimilar to the conditions prevailing in sports relating situations. Subjects were 60 male high school students. The SCAT was used in the study. The results revealed that high achievers obtained better performance than low achievers in preliminary phase, where the elements of risk taking and perceived ability were not involved. None of the
effects were significant in the analysis where these last two factors were taken into account.

Auvergne Sarah (1983) investigated motivation and causal attribution for high and low achieving athletes. The subject of this study included 12 female and 33 male skiers (mean age being 15.3 years) who attended sports study high schools in France. 18 skiers obtained above average competition results; 15 skiers obtained average result, and 12 skiers obtained below average results. The subjects responded to an achievement motivation questionnaire, constructed by qualified judges. The items which were internally validated, included areas of achievement motivation (fear of success, fear of failure, risk preference, intrinsic motivation) which were assessed on 5 point scale. A split of reliability test revealed that the questionnaire was reliable. The causal attribution was also recorded, both for success and failure. Results indicated that athletes expressed similar degrees of motivation despite their competition performance. However, a larger portion of the athletes mostly attributed success internally and failure externally than did the athletes, whose performance were poor. Low achieving athletes were less consistent in their causal attribution for both success and failure.

Reeves (1983) investigated players with different playing positions in soccer. He found that soccer players
who played different positions (goal, defensive, midfield and attack) did not differ significantly on specific personality characteristics including need for achievement. There were, however, significant interactions between (i) need for achievement, position played and success, (ii) need for achievement, degree of success and position preference, and (iii) need for affiliation and position played. Finally, the more skilled and successful the athlete who played in a preferred position, the less was the need for achievement.

Tannenbaum and Furst (1985) studied the relationship between the sports achievement attribution and related situational variables. The study was constructed to delineate the relationship between enduring sports attribution and variables, such as sport outcome, gender, perceived ability and sport type. Athletes participating in team sports (N = 94) and individual sports (N = 44) were given the Wingate Sport Achievement Responsibility Scale (WSARS) in neutral situations and the Causal's Dimensional scale (CDS) following the competition. They also rated their own ability levels. The results revealed that the individual athletes assigned unsuccessful sports events more internally than the team athletes, with a similar tendency also found in successful events. Following the competitions, individual sports athletes assigned the cause, more internally than team athletes. Team athletes rated the first
cause as more controllable. Winners assigned the causes as more stable, controllable and partially more internal than losers. The higher the perceived ability, the more internal the responsibility for both successful and unsuccessful sports events, and more internal, stable and controllable following competition. Athletes in successful events, tended to rate the cause following a win more internally than their counterparts. Athletes in unsuccessful events, tended to assign the causes following loss more externally but the difference did not reach significance level. Further it was found that the athletes internal in achievement responsibility on successful events were not significantly more internal, following a win than their counterparts.

Deeter (1989) conducted a study regarding development of a model of achievement behaviour for physical activity. The purpose of the study was to evaluate the relationships among various individual difference variables and their roles in predicting achievement behaviours in a physical activity setting. Two samples of male and female university students consisting of 315 and 146 subjects, enrolled in required physical education skills programmes were drawn. The results showed that a model including the behavioural commitment indices produce n.Ach. of determination but with substantial degrees of parsimony. Also this model accounted for a large percentage of variances of the performance indices.
Rambali (1989) conducted a study on personalities and achievement motivation of sports and non-sports persons. A sample of 400 students (200 sports and 200 non-sports persons) was selected randomly from the various institutions of Varanasi. The main objective of the study was to compare personality and achievement motivation of sports and non-sportsmen. Cattell's 16 PF and Srivastava's achievement motivation scales were administered. One of the main findings of the study was that the sportsmen scored significantly higher on the personality traits, emotional stability, intelligence, trustworthiness, assertiveness, obedience, independence, relaxed temperament and practicability than non-sportsmen. Contrary to it, the non-sportsmen were found to have weak ego-strength, apprehensiveness, less intelligent, less stable, tense and humble. The sportsmen were also possessing significantly higher motivation than the non-sportsmen. Sports group also significantly scored higher on extroversion, toughness, poise and independence dimensions. Non-sports group scored higher on anxiety. The study establishes that sportsmen have a specific personality structure.

Sinha and Verma (1989) found that high achieving female athletes were more extroverted, dominating, helpful and aggressive in comparison to low achieving female athletes.

Rudisill (1990) conducted a study on the influence of
achievement goal orientation on children's perceived competence, expectations, persistence and performance for three motor tasks. The purpose of this investigation was to determine whether various types of goal setting orientation influenced children's perceived competence, expectations, persistence and performance. Subjects were 40 male and female children in the age group of 9 to 11 years. The subjects were asked to perform four test trial blocks (in total 8 test trials) on three different motor tasks (throwing for accuracy, standing long jump, sit and reach). Each subject was randomly assigned to one of the four achievement goal setting orientation groups, (i) task mastery (ii) competitive (iii) self goal, or (iv) no goals group. Significant results were found for expectancy, persistence and performance. The results related to expectancies showed a goal - orientation group main effect for all three tasks. The mastery group had the highest expectation for all three tasks. Significant results were also found for persistence for the jumping task, $F (3, 32) = 9.86$, $p < 0.001$, and the flexibility task, $F (3, 32) = 7.19$, $p < 0.001$. Overall, all results of this investigation have provided support for 'mastery goal - setting' for children. It appears that when an individual is provided mastery achievement goals, cognitive and behavioural factors are positively affected. On the other hand, it appears that competitive ability achievement goals do not have the
positive effects on achievement motivation when the goals are not achieved.