

CHAPTER - II

REVIEW OF RELATED LITERATURE

The review of literature is an essential step to get a full picture of what was done with regard to the problem under study. Which brings about a deep and clear perspective of the overall field. The literature in any field forms the foundation upon which all future work will be built. It is a necessary one to formulate such a review of various scholars work. The collected reviews, bring out a deep insight and clear perspective of the overall field in such reviews. Such collected reviews have been presented in logical order, in order to importance and in sequence of merit. In such a way, for having the features of this appropriate heads for easy reference and understand present trends in the area of present study. This chapter is a step to get full picture of what has been done and said with regard to the problem under study. The review of literature is given as follows.

2.1. STUDIES ON PLAYERS PSYCHOLOGICAL CHARACTERISTICS

Kirkcaldy (1982) evaluated the personality and sex difference related to positions in team sports. Athletes were administered personality inventory. The attacking positions scored higher on psychoticism and extroversion as compared to middle field players. The defenders showed more emotionally stable pattern than the offensive players. The female attacking players were less extroverted and more neurotic than players from other position.

Daino (1985) studied the differences in personality traits of adolescent tennis players and non-participating adolescent group possessing similar characteristics. Eysenck personality inventory and 'will to win' questionnaire were administered. The results indicated that tennis players are significantly higher in extroversion and 'will to win' but exhibit less neuroticism, anxiety obsession and depression.

Mann and Sandhu (1990) conducted a study on the adjustment of 202 university team representative male students, grouped into individual sports athletes and team sports athletes, with the help of AICS. The athletes from individual sports (n = 88), were drawn from athletics, boxing, gymnastics, wrestling cross country race and weight lifting, while the team athletes (n = 114) were from football, hockey, handball, basketball, Kabaddi and volleyball. The team sports athletes showed a better educational adjustment than the individual sports athletes.

Ralph(1999) to determine if the dimensions of the five-factor model of personality could be used as predictors of athletic performance and to demonstrate the utility of the five-factor model as a theoretical paradigm capable of organizing personality research on athletic competition. Subjects were seventy nine female athletes from four different women NCAA division I soccer teams. All subjects completed a bipolar adjective scale designed to measure the five factors. Coaches ratings on several performance dimensions and actual game statistics were also collected. Regression analyses indicated that the personality dimensions of neuroticism and conscientiousness explained approximately 23% of the variance in coaches ratings, while conscientiousness was the sole predictor of actual games statistics, explaining about 8% of the variance. The potential theoretical and empirical values of these findings were discussed.

Dennis (1998) compared the males members of two college teams, baseball and football, and female members of two teams, field hockey and lacrosse (combined) and equestrians, on the five scales of the Zuckerman-Kuhlman personality Questionnaire (ZKPQ). All teams were significantly higher on the activity and lower on the Neuroticism-Anxiety scales than the general college population of the University of Delaware. Lacrosse and field hockey athletes were higher on activity than equestrians and baseball players were higher than football players on this scale. Contrary to predictions, football players scored lower than the general university male

population on impulsive sensation seeking and the lacrosse and field hockey players did not differ from the general college females on impulsive sensation seeking. The baseball players also scored lower on this scale. The hypothesis that body contact sports attract high sensation seeking and aggressive participants was not supported

According to **Raglan (2001)** that as an athlete's mental health either worsens or improves performance should fall or rise accordingly, and there is now considerable support for this view. Studies have shown that between 70 and 85% of successful and unsuccessful athletes can be identified using general psychological measures of personality structure and mood state, a level superior to chance but insufficient for the purpose of selecting athletes. Longitudinal MHM research indicates that the mood state responses of athletes exhibit a dose-response relationship with their training load, a finding that has shown potential for reducing the incidence of he staleness syndrome in athletes who undergo intensive physical training.

Schutz (1979) collected data on academic achievement, absenteeism, and athletic involvement (hockey) from four hundred eighty four boys throughout British Columbia. School and minor hockey records were used to obtain longitudinal data for each boy from grade I until high school graduation or school withdrawal. Results indicated that hockey players exhibit less school absenteeism than non hockey players, but are not different with respect to grade point average. Hockey players, at the juvenile level or lower, tend to attain a slightly higher grade point average during the years they are playing hockey in comparison with their academic achievement during the years they are not playing hockey. Of the hockey players with lower than average. I.O's those who exhibit poor achievement tend to drop out of hockey earlier than those who have average or above average grades.

✓ **McCarthy and Kelly (1978)** studied a relationship between aggression and performance among hockey players. With certain penalties used as a measure of aggression, two groups of male college ice hockey players were compared for differences in goals and assists. Those rated high in aggression scored significantly more goals than those low in aggression. The direction of differences in assists was the same but did not reach significance. When the same groups were compared for shots on goals, significant differences were found, favoring the high aggressive group. Attempts to relate performance and personality measures were not successful when comparison on a self-report measure of anger was analyzed.

Boardly and Kavussanu (2009) examined the effects of perceive motivational climate and coaching character-building competency on pro-social and anti-social behaviors towards team-mates and opponents in field hockey and netball; whether the effects of perceived character-building competency on sport behaviors are mediated by moral disengagement; and whether these relationship are invariant across sport. Field hockey (n=200) and netball (n=179) players completed questionnaires assessing the aforementioned variables. Structural equation modeling indicated that mastery climate had positive effects on prosocially and negative effects on antisocial behavior towards team-master, while performance climate had a positive effect on antisocial behavior towards team-mates. Perceived character-building competency had a positive effect on prosocial behavior towards opponents and negative effects on the two antisocial behavior; all of these effects were mediated by moral disengagement. No effect was found for prosocial behavior towards team-mates. The model was largely invariant across sport. The findings aid our understanding of social influences on prosocial and antisocial behavior in sport.

Pinter et.al., (2007) conducted a study to determine if there was a significant difference in measures of ambition, perseverance, self-esteem, and power motive between non-athletes and athletes, and also between different sports such as soccer, volleyball, basketball, softball, baseball, football, track/cross country, and cheerleading. Two experiments contrasted interactions among group leaders with interactions between individuals in a mixed-motive setting. Consistent with the idea that being accountable to the in group implies normative pressure to benefit the in-group, experiment 1 found that accountable leaders were more competitive than individuals. Consistent with the idea that being unaccountable to the in-group implies normative pressure to be cooperative and that high guilt proneness provides motivation to be moral, experiment 2 found that when guilt proneness was high, unaccountable leaders were less competitive than accountable leaders and did not differ significantly from individuals. In other words, the robust inter individual-inter group discontinuity effect was eliminated when groups had unaccountable leaders who were high in guilt proneness.

Alison and Briony (2004) investigated the personality differences of 21 amateurs and 20 instructors who participated in the high risk sports of skydiving, hang-gliding, paragliding, scuba diving, micro lighting, and rock climbing, versus those who did not. 38 men and 28 women were assessed using the Eysenck personality questionnaire revised, the general health questionnaire, the generalized self-efficacy scale, and a type A/B personality measure. Instructors and amateurs scored significantly higher on extroversion and lower in neuroticism than non participants, however they differed from each other on the GHQ and type A/B personality scores. Amateurs scored significantly higher on psychoticism and self-efficacy than instructors and non participants. In conclusion, these test scores suggest that people who are attracted to high risk sports tend to be at the extroverted and emotionally stable end of the scale, with a tendency to exhibit type a

characteristics; however, instructor's scores on psychoticism and self-efficacy are more akin to those of non participants.

Miguel (2000) reviewed that the factors that have been associated with athletic success, measures of these factors, and use of these factors in making selection decisions. Whether it be at a collegiate or professional level, organizations have been faced with public pressure to be successful. The selection of appropriate personnel is one means for doing this. Although coaches are experts in identifying the physical characteristics needed for success in their field; they lack the skills necessary to assess the psychological factors that have been proven to have a significant impact on athletic performance. The identification, quantification and implementation of these psychological attributes in selection decisions can therefore have a significant impact on a program's success.

Tara and Carrie (2007) investigated the personalities of the defenders. One instrument currently dominating personality research is the five factor model, a taxonomy that identifies five major domains of personal traits, composed of sets of facets. This model can be used within an organizational or vocational capacity to reveal dominant tendencies, such as openness to new experiences. Within a security context, this tool could show what patterns professionals exhibit, which may reveal areas of insufficient diversity and 'blind spots' in defenses. We surveyed 43 security professionals using a five factor model-based test (the IPIP-NEO) to reveal common dominant traits. Found that our sampled security population demonstrated that they were highly dutiful, achievement-striving, and cautious; in addition, they were high in morality and cooperation, but low in imagination.

Tanja (2009) investigated the personality dimensions and compare the results to the results of non-risk sports athletes and non-athletes. Thirty eight high-risk sports athletes participated in the research

(alpinists, sky divers, paragliders, white-water kayakers, downhill mountain-bikers, motocross riders, downhill skiers and ski jumpers). The non-risk sports athletes consisted of 38 swimmers, track athletes, sailors, flat-water kayakers, rowers, Nordic skiers, sports climbers and karatekas. The non-athletes were equaled with both groups in age and education and included 76 non-athletes. The big five observer scale was used. It was found that high-risk sports athletes scored by non-risk sports athletes. The same order of groups was shown in conscientiousness and energy. Openness was the highest in the non-risk sports athletes, followed by the non-athletes and the lowest score was achieved by the high-risk sports athletes. The differences in acceptability were not significant. Our out of five hypotheses were accepted.

Mauricio (2005) compared the personality profiles between Brazilian high-level athletes and non-athletes through psychological characteristics, verifying similarities and differences between them our Innibition, Irritability, Aggressiveness, Fatigability, Physical, Complaints, Health Concern, Frankness, and Emotionality. It is observed that there are specific and unique psychological characteristics of Brazilian high-level athletes when compared with a non-athletes sample. The groups are distinguished significantly in the majority of variables, indicating that athletes present differentiated psychological characteristics.

Betsy (2001) conducted the purpose of study with comparing high achieving and low achieving adolescents attitudes towards school, attitudes towards teachers, goal-valuation, motivation, and general academic self-perceptions. Specifically, they sought to determine whether high achievers really differed from low achievers on these five factors, and to ascertain which of the five factors the best predictors on these five factors were, and to ascertain which of the five factors were the best predictors of students status as either a high achiever or a low achiever. The comparison of the scores of high achievers and low achievers on attitudes toward school, attitudes toward teachers, goal-valuation, motivation, and general on

all five factors. However, two factors, academic self-perception and motivation/self-regulation, predicted students achievement status as well as the five-factor model did. Using logistic regression, these two subscales were able to classify students achievement status correctly over 85% of the time. These results suggest that high achievers and low achievers differ in both their motivational patterns and their academic self-perceptions.

Hoffman (1983) investigated the effect of psychological momentum on athletic performance. The subjects were randomly placed in the experimental group and were issued a self – included relaxation procedure (S.I.R.P) designed to develop psychological momentum over one month period. The remaining ten subjects were placed in the control group and were not issued the S.I.R.P. Strength and endurance were measured upon the amount of completed intervals of three separate tasks (a) Bar-dips; (b) Sit – ups; and (c) Pull-ups, respectively. A base line assessment of completed intervals revealed approximately equal strength and endurance between subjects in the pre-treatment phase. The results strongly support the hypotheses. It was found that the development of psychological momentum significantly improves the strength and endurance of athletes in terms of completed intervals of each task.

Liewellyn and Blucker (1982) compared groups that had nine to ten years experience with groups with one to two years experience and found that the more the experienced group is, more is social extroversion, general sociability and social leadership. As personality traits change gradually, cautions against reading the results as a demonstration of cause and effect. That changes occur with experience is clear. The problem occurs when we try to analyse all the elements that make up the “experience”.

Kroll (1967) conducted a study on ninety four amateur and collegiate wrestlers by administering the 16 PF questionnaires. Personality profiles were studied across different levels of demonstrated achievement in

wrestling. Discriminant function analysis failed to establish any profile difference between criterion groups. Groups assessed were (a) a superior group comprised of twenty eight wrestlers from U.S. Olympic team, NCAA or NAIA champions or place winners (b) an excellent group comprised of thirty three collegiate wrestlers who were varsity representatives, rated excellent by their coach and who had won at least sixty percent of their matches during the season and (c) an average to below average group of thirty three wrestlers representing four college teams. When compared to the norm, wrestlers demonstrated a significant departure from average on factor I indicating tough-mindedness, self-reliance and masculinity. No support was found for the suggestion that wrestlers may possess a neurotic profile.

Uppal and Gill (1986) compared the psychological profile of twenty Junior National level Badminton players with that of twenty female entrants to the Bachelors Degree course in physical education. The badminton players were found to be significantly higher on factors A (outgoing), C (emotionally), E (Assertive), F (Happy-Go-Lucky), L (Hard to fool) and Q (Analytical) than the physical education entrants. In all other cases normalcy was reported.

According to **Teipel (1989)** individual and team performance in soccer is highly dependent on the technical and psychological abilities of the individuals players. Successful behavior in specific game situations must systematically taught and learnt in a long-lasting process. In general successful behavior comprises the process of anticipation is determined by, problem analysis, decision making and evaluation of the selected section. In that way decision making depends on time related complex, perception of space as well as of movements of the ball, the opponents and the team mates. In this study decision making of soccer players from high and low skill levels is analyzed. A sample of professional players and a sample of low amateur players evaluate thirty game scenes on a monitor in a laboratory situation in respect of the expected action of the ball-leading

players. The results show that at least in one third of the thirty scenes significantly different decisions between professional and amateur players can be found. The professional players tend to prefer individual rather than group or team related technical and tactical actions. The evaluation of the effectiveness of the selected actions in the professional players in the most scenes is slightly higher than in the amateur players. These findings are discussed in respect of the different skill learning and aspects of decision making of professional and amateur players.

Powan (1995) studied the selected psychological variables namely anxiety, aggression, motivation and personality traits in relation to Basket ball performance. The psychological factors, aggression is highly correlated with the playing ability ($r = .941$). Further, it is noted that the coefficient of multiple correlation ($r = .981$) revealed that psychological factors put together play in important role in basket ball performance.

✓ **Dureha (1995)** administered the kamlesh Sports Achievement motivation test, and Rainer Martins Sports Competition Anxiety Test (Adult Form) to find out achievement motivation and pre-competition anxiety among Indian inter varsity hockey players and to compare high and low pre-anxiety competition anxiety group on achievement motivation. It was concluded that there is a significant relationship between achievement motivation and pre-competition anxiety of hockey players and significant difference in the level of achievement motivation of high and low pre-competition anxiety group of Indian inter varsity level male hockey players.

Bhuller (1991) conducted a study on five groups of sports women specializing in hockey, hand ball, basket ball, cricket and volley ball, by using 16 PF questionnaire. The results of inter group comparison with the help of t-ratio revealed that hockey group was characterized by being emotionally stable (c) assertive (e) tough minded (I) lively (F) and

venturesome (H). The hand ball group was venturesome (H) like hockey players. The traits of volley ball group observed were E (Mild), F (Sober), and H (Shy) cricket group excellent in A (Outgoing) and volley ball in H (Venturesome). All the five groups in spite of differences in games had basically some common traits.

Singh Rambali (1989) has conducted a study on 400 students (200 sportsmen and 200 non sportsmen) and compared the personality traits and achievement motivation of two groups. Cattell's 16 PF and Gandhi and Srivastava's Achievement motivation scales were administered. The results show that the sportsmen scored significantly higher on the personality traits of emotional stability, intelligence, trustworthiness, assertiveness, obedience, independence, relaxed temperament and practicability than non-sportsmen. Contrary to it the sportsmen were found to have weak ego strength and are apprehensive, less intelligent, less stable, tense and humble. Like wise, the sportsmen were possessing significantly higher achievement motivation than the non-sportsmen. The sports group and the non sports group differ in terms of second order personality factors. Sports group scored significantly higher on extroversion, tough poise and independent dimensions where as non sports group scored higher on anxiety.

Kirkcaldy (1982) in his study administered the Eysenck personality questionnaire to athletes. By comparing team and individual athletes using uni-variate and multiple discrimination function analysis method, no significant differences were found to exist among the personality dimensions. However, when team sports were considered separately and by categorizing athletes into one of the three classes (offensive, center and defensive players), it was found that males in attacking positions were substantially higher in "Psychoticism (tough minded, dominant, aggressive) and extroversion" compared to mid-field players. The forward, offensive players were less easily differentiated from defensive players, the later group exhibiting a more "emotionally stable" pattern than the offensive

athletes. In females the trend was somewhat reversed, that is attacking players were less extroverted and neurotic than players from other positions.

Lemmink et.al., (2004) to determine the reliability of two field hockey-specific tests: the Shuttle Sprint and Dribble Test (ShuttleSDT) and the Slalom Sprint and Dribble Test (SlalomSDT). The shuttle sprint and dribble performances of 22 young male and 12 young female field hockey players were assessed on two occasions within 4 weeks. Twenty one young female field hockey players took part in the SlalomSDT twice in a four week period. The ShuttleSDT required the players to perform three 30-m shuttle sprints while carrying a hockey stick alternated with short periods of rest and, after a 5-minute rest, three 30-m shuttle sprints alternated with rest while dribbling a hockey ball. The SlalomSDT required the players to run a slalom course and, after a 5-minute rest, to dribble the same slalom with a hockey ball. There were no differences in mean time scores between the two test sessions. The mean differences were small when compared with the means of both test sessions. With the exception of the slalom sprint time, zero lay within the 95% confidence interval of the mean differences indicating that no bias existed between the two measurements. With the exception of delta shuttle time (0.79), all intraclass correlation coefficient values for the ShuttleSDT, met the criterion for reliability of 0.80. Intraclass correlation coefficient values for SlalomSDT were 0.91 for slalom sprint time, 0.78 for slalom dribble time, and 0.80 for delta slalom time. This study shows that the ShuttleSDT and the SlalomSDT are reliable measures of sprint and dribble performances of young field hockey players.

Elferink et.al. (2004) to determine the relationship between multidimensional performance characteristics and level of performance in talented youth field hockey players, elite youth players (n = 38, mean age 13.2 years, sd = 1.3) were compared with sub-elite youth players (n = 88, mean age 14.2 years, sd = 1.3) on anthropometric, physiological,

technical, tactical and psychological characteristics. Multivariate analyses with performance level and gender as factors, and age as the covariate, showed that the elite youth players scored better than the sub-elite youth players on technical (dribble performance in a peak and repeated shuttle run), tactical (general tactics; tactics for possession and non-possession of the ball) and psychological variables (motivation) ($p < 0.05$). The most discriminating variables were tactics for possession of the ball, motivation and performance in a slalom dribble. Age discriminated between the two groups, indicating that the elite youth players were younger than the sub-elite players. In the guidance of young talented players to the top as well as in the detection of talented players, more attention has to be paid to tactical qualities, motivation and specific technical skills.

Gee and Sullivan (2006) conducted a study on the use of aggressive behavior in hockey. The purpose of the current investigation was to test the utility of a videotaped observation (VO) approach on the study of aggressive behaviour, and to compare the results with previous findings. Subjects were male varsity hockey ($n = 79$) players competing at a neutral location where two video cameras had been placed to record the action. The competitive tapes were coded by two independent observers using a validated operational list, with a high inter-rater reliability ($> 90\%$). The VO design accounted for significantly more aggressive infractions [$\chi^2(1, N = 74) = 28.60, p < .001$]; thus, highlighting its ability to overcome previous limitations. Furthermore, this more inclusive sample of behaviors provided substantially different results when tested according to the score differential, period, player position, and team status (i.e., winning, losing, tied). These discrepancies are explained according to the methodological differences. Finally, limitations of the VO design are discussed and its future value to the study of aggressive behaviour in sport is highlighted.

Solomon (2001) examined the influence of various impression cues (performance and personality) on athlete performance. Eight Division

I teams were invited to participate. Head coaches completed the Expectancy Rating Scale (Solomon, 1993) to assess expectations of physical ability, and both coaches and athletes completed Vealey's (1986) Trait Sport Confidence Inventory to assess athlete confidence levels. Multiple regression analyses revealed that coach evaluation of athlete confidence was the only significant predictor of performance. Levels of the three expectancy variables differed across sport type.

Terry and Youngs (1996) Field hockey players (N =128) completed the Competitive State Anxiety Inventory-2 and the Profile of Mood States about 45 min. before a British Universities trial. Single-factor multivariate analysis of variance indicated no significant differences between selected and non selected players for any pre performance mood or anxiety measure. Discriminant function analysis showed that 74 participants (57.81%) could be correctly classified as selected or non selected players on the basis of pre-performance mood scores. This figure rose to 83 participants (64.84%) when scores on the anxiety subscales were also included in the discriminant function analysis. Anxiety scores alone discriminated 71 participants (55.47%). These results concur with earlier proposals of Terry that psychological state measures decline in predictive effectiveness in long duration, open skill team sports.

Jones and Cale (1989) examined the relationship between multidimensional competitive state anxiety and cognitive and motor (i.e. perception-motor speed) subcomponents of performance in an experimental group of hockey players during the period leading up to an important hockey match, and also in a control group of hockey players before a routine training session. Using a 'time-to-event' experimental paradigm, an increase in somatic anxiety 20 min before the hockey match was accompanied by improved perception-motor speed performance. Stepwise multiple regression analyses showed that somatic anxiety was negatively related to digit span performance, while somatic anxiety and

self-confidence were positively related to perception-motor speed performance. These findings suggest that somatic anxiety may be an important source of performance variance.

Elferink et.al., (2010) to determine whether youth athletes with an "average" (regional), "high" (sub-elite), and "very high" (elite) level of performance differ with respect to their self-assessed tactical skills, 191 youth field hockey players (mean age 15.5 years, $s = 1.6$) completed the Tactical Skills Inventory for Sports (TACSIS) with scales for declarative ("knowing what to do") and procedural ("doing it") knowledge. Multivariate analyses of covariance with age as covariate showed that elite and sub-elite players outscored regional players on all tactical skills ($P < 0.05$), whereas elite players had better scores than sub-elite players on "positioning and deciding" ($P < 0.05$) only. The sex of the athletes had no influence on the scores ($P > 0.05$). With increasing level of performance, scores on declarative and procedural knowledge were higher. Close to expert performance, declarative knowledge no longer differentiated between elite and sub-elite players ($P > 0.05$), in contrast to an aspect of procedural knowledge (i.e. positioning and deciding), where elite players outscored sub-elite players ($P < 0.05$). These results may have implications for the development of talented athletes.

Robert and Gaetan (1994) to examine the relationship between self-determined motivation and sportsmanship orientations by using a longitudinal design, as well as recent theoretical approaches to sportsmanship (Vallerand, 1991, 1994) and motivation (Deci & Ryan, 1985, 1991). Male adolescent elite hockey players ($N = 77$, mean age = 15.8) completed a questionnaire assessing both constructs 2 weeks into the hockey season (T1) and at the end of the regular season (T2), 5 months later. The results from cross-lag correlations suggested that, over time, self-determined motivation and sportsmanship orientations have a positive bidirectional relation, in which self-determined motivation has

greater influence on sportsmanship. These results give further impetus to the need to consider motivation in future studies on sportsmanship.

Justin and Cheryl (2011) Facial characteristics are an important basis for judgments about gender, emotion, personality, motivational states and behavioral dispositions. Based on a recent finding of a sexual dimorphism in facial metrics that is independent of body size, we conducted three studies to examine the extent to which individual differences in the facial width-to-height ratio were associated with trait dominance (using a questionnaire) and aggression during a behavioural task and in a naturalistic setting (varsity and professional ice hockey). In study 1, men had a larger facial width-to-height ratio, higher scores of trait dominance, and were more reactively aggressive compared with women. Individual differences in the facial width-to-height ratio predicted reactive aggression in men, but not in women (predicted 15% of variance). In studies 2 (male varsity hockey players) and 3 (male professional hockey players), individual differences in the facial width-to-height ratio were positively related to aggressive behavior as measured by the number of penalty minutes per game obtained over a season (predicted 29 and 9% of the variance, respectively). Together, these findings suggest that the sexually dimorphic facial width-to-height ratio may be an 'honest signal' of propensity for aggressive behavior.

Allik et.al., (2010) Consensus studies from 4 cultures-in Belgium, the Czech Republic, Estonia, and Germany-as well as secondary analyses of self- and observer-reported Revised NEO Personality Inventory (NEO PI-R) data from 29 cultures suggest that there is a cross-culturally replicable pattern of difference between internal and external perspectives for the Big Five personality traits. People see themselves as more neurotic and open to experience compared to how they are seen by other people. External observers generally hold a higher opinion of an individual's conscientiousness than he or she does about him- or herself. As a rule,

people think that they have more positive emotions and excitement seeking but much less assertiveness than it seems from the vantage point of an external observer. This cross-culturally replicable disparity between internal and external perspectives was not consistent with predictions based on the actor–observer hypothesis because the size of the disparity was unrelated to the visibility of personality traits. A relatively strong negative correlation between the average self-minus-observer profile and social desirability ratings suggests that people in most studied cultures view themselves less favorably than they are perceived by others.

Dobersek and Bartling (2008) studies on relationship between personality type and sport preference; why certain people choose a particular sport, why some people prefer a team sport, and others prefer an individual sport. In this research, athletes from four different sports (three individual and one team sport) and non-athletes took part in the study. The primary interest was correlations between measures of personality and different sport involvements within sport participation. One focus of interest was to ascertain what personality is the best for a particular sport, enabling the athletes to find more success with the least effort. Results from this study showed that athletes in team sports are more neurotic than athletes who participate in an individual sport and who tend to be more stable. Considering that there were more participants from an individual sport than team sports, results may be skewed a bit due to the lack of proportionality.

Aidman, (2007) was examined in a case of athletic achievement in Australian rules football. A group of 32 elite junior players from a leading Australian Football League (AFL) club were assessed with the Sixteen Personality Factors Inventory (Form A; Cattell, Eber & Tatsuoka, 1970) at the peak of their junior playing career. Seven years later, 13 players from this junior sample had made it into senior AFL competition, whereas 19 others ended up playing minor leagues or dropped out. The two groups did

not differ on primary personality factors, nor on coach ratings of their performance as juniors. However, when the players' physical potential rated by their junior coach was controlled for in a MANCOVA, the differences between the groups became highly significant: both on multivariate estimates ($F(16, 14) = 3.51; p = .012$) and on a number of individual factors. Consequently, personality factors produced a more accurate prediction of the junior players' transition to senior AFL (84.2% players correctly classified as successful transition makers vs. drop-outs in a discriminant function analysis) than did the combined coach ratings of the players' performance and potential shown in juniors (59.4% accuracy). Moreover, when personality factors were combined with only one of the coach ratings - that of players' physical potential - the same prediction achieved a perfect 100% accuracy. Regression analyses further revealed that predictions from personality measures were much more accurate for longer term outcomes: they explained just over 11% variance in the coach ratings of player performance in the junior championship, but nearly 61% of variance in the aggregate performance ratings over five seasons in the seniors competition, and 99% of variance in the coach ratings on the construct "struggling cruising through senior 3 ranks". The results support the mediating role of personality in converting ability into achievement. In practical terms, they confirm the utility of combining estimates of physical ability with personality profiling in predicting the likelihood of success in junior players' transition to seniors competition.

Andrew et al., (2005) has investigated the influence of personality on exercise-induced mood changes. It was hypothesized that (a) exercise would be associated with significant mood enhancement across all personality types, (b) extroversion would be associated with positive mood and neuroticism with negative mood both pre- and post-exercise, and (c) personality measures would interact with exercise induced mood changes. Participants were 90 female exercisers ($M = 25.8$ yr, $SD = 9.0$ yr) who

completed the Eysenck Personality Inventory (EPI) once and the Brunel Mood Scale (BRUMS) before and after a 60-minute exercise session. Median splits were used to group participants into four personality types: stable introverts (n = 25), stable extroverts (n = 20), neurotic introverts (n= 26), and neurotic extroverts (n = 19). Repeated measures MANOVA showed significant mood enhancement following exercise across all personality types. Neuroticism was associated with negative mood scores pre- and post-exercise but the effect of extroversion on reported mood was relatively weak. There was no significant interaction effect between exercise-induced mood enhancement and personality. In conclusion, findings lend support to the notion that exercise is associated with improved mood. However, findings show that personality did not influence this effect, although neuroticism was associated with negative mood.

Stuart et.al., (2003) Two groups (n = 86) of university athletes (contact, no contact) and two matched groups (n = 86) of non-athletes completed the Eysenck Personality Inventory (Eysenck & Eysenck, 1968). Extraversion did not vary significantly between athletes and non-athletes or between contact and no contact athletes, but it was higher for athletes compared to American college norms. For neuroticism, athletes scored significantly lower than non-athletes. Because neither extraversion or neuroticism changed over time (four years of study), these results are consistent with the gravitational hypothesis that people higher in extraversion and lower in neuroticism are attracted to university sports.

Graydon and Murphy (1995) investigated the effect of personality on social facilitation in a sporting context. After initial screening of 50 subjects by administration of the E.P.I., a group of 20 were selected for the experiment. Of these, 10 were designated as extraverts and 10 introverts. The task selected was a table tennis serve into a target area marked by grids. Subjects were required to perform the task both alone and in front of an audience. The results were analyzed using a two-way ANOVA with one

repeated measure. There were no significant main effects, but a highly significant interaction ($F_{1,18} = 17.7, P < 0.001$) between personality type and audience condition was revealed. This effect was due to the predicted pattern of extraverts performing better than the introverts in the presence of an audience and vice versa for the alone condition. It is concluded that the personality dimension of extraversion/introversion is a significant factor in social facilitation research.

René Clarisse et.al., (2010) investigated the respective and related effects of the psychosocial conditions of testing (individual vs. group) and personality on the levels and daily variation of attention performance of adolescents attending boarding school. From scores obtained on an adapted version of Horne and Östberg's Morningness Eveningness Questionnaire (MEQ), 17 male (9 morning-types and 8 evening-type) participants were selected from among 50 volunteers. Attention was measured using a number crossing-out test carried out at four times of the day (07:30, 12:00, 14:00, and 19:30). No main effect of testing mode and personality trait was found on the mean level of performance. Time-of-day had an effect on the level of performance, which differed depending on whether the test was administered in a group or individually and on the morningness and eveningness dimension. The difference between the daily profiles appears to be dependent on the interaction of the factors studied. This study investigated the concept of 'group psychological rhythm city' and highlights the importance of synchronizing social rhythms.

2.2. STUDIES ON PREDICTION ANALYSIS

Paulo et.al., (2010) conducted a study to identify sex differences in volleyball game-related statistics, the game related statistics of several World Championships in 2007 (N = 132) were analyzed using the software VIS from the International Volleyball Federation. Discriminant analysis was used to identify the game-related statistics which better discriminated

performances by sex. Analysis yielded an emphasis on fault serves (SC = -.40), shot spikes (SC = .40), and reception digs (SC = .31). Specific robust numbers represent that considerable variability was evident in the game-related statistics profile, as men's volleyball games were better associated with terminal actions (errors of service), and women's volleyball games were characterized by continuous actions (in defense and attack). These differences may be related to the anthropometric and physiological differences between women and men and their influence on performance profiles.

Klecka (1980) developed a model that would identify the contributions of anthropometric and performance variables to the discrimination of elite adolescent athletes according to their particular sport as well as from untrained age-mates. Sixty one females 14-19yrs participated in the study. Discriminant analysis (Klecka, 1980) (all variables entered together) was applied to the anthropometric and performance variables to develop a model capable of predicting which group the subjects participated in ($p < 0.05$) (SPSS 10.0). Analysis revealed two significant discriminant functions (DF1 & DF2) ($p = 0.000$). DF1 and DF2 accounted for 79.5% and 20.5% of the variance, respectively. Standardized coefficients (Table 1) represent an index of the relative importance of each variable and quantify the potential of each variable to discriminate among groups. The variables primarily responsible for these dissimilarities are SKFsum, CMJ height and age for DF1 and elbow breadth and CMJ height for DF2 (Table1). The larger the magnitude of a standardized coefficient (ignoring the sign) the greater is that variable's contribution. Based on these scores, group membership may be predicted according to the proximity of the respective group centroid values. As shown in Fig 1, group centroid values in DF1 (J: 1.672, V: 0.963 and C: - 2.682) describe the differences among C and the two sport groups. The group centroid values in DF2 (J:-1.087, V: 1.237 and C:-0.212) describe the differences between J and V (Fig. 1). In Table 2, that summarizes the classification results for the

two DF, it shows that 93.4% of the subjects were correctly classified to their respective group.

Matheson et.al., (1997) examined the influence of winning and losing on team cohesion of two coasting (swimming, gymnastics) and two interacting (lacrosse, basketball) female intercollegiate athletic teams. Fifty-six of the original 70 subjects were administered the Group Environment Questionnaire (GEQ) (Widmeyer, Brawley, & Carron, 1985) three times during the playing season; preseason, after winning and after losing contests. The GEQ measures four subscales of cohesion: Attraction to the Group-Task (AGT), Attraction to the Group-Social (AGS), Group Integration-Task (GIT), Group Integration-Social (GIS). A 2 by 2 ANCOVA examined the influence of type of team (co acting, interaction) and outcome (win, loss) on the four subscale measures of GEQ. Significant interaction effects (p less than .05) were obtained on the AGT and GIT subscales, with co acting teams in each instance scoring higher than interacting teams in losing situations. Significant main effect (outcome) differences (p less than .05) were found between coasting and interacting teams on only the AGT subscale, with coasting teams recording higher scores than interacting teams. Results were discussed in terms of the effects of anticipated outcome of competition and divisional level of competition.

Peinado et.al., (2007) compared the physiological characteristics between flat terrain, all terrain and uphill cyclists and develop a multivariate model that would allow to discriminate among cyclists according to their specialty. Differences in the means among groups (FT, AT and UP) were examined using a one way ANOVA. First, discriminant analysis was applied to 28 variables measured and then, the same analysis was applied to anthropometric parameters (8 variables). The significance level was set at $p < 0, 05$. There were significant differences between UP and FT [height, body mass (BM), body fat (BF), free fat body mass (FFM), maximum oxygen uptake/Kg (VO_2 max/Kg)] and between UP and AT

(body mass, FFM). The first discriminant analysis revealed one significant function. This function represented differences between FT and the other two groups (AT and UP). After validation the analysis showed that 100 % of the cyclists were correctly classified in their respective specialty. The second analysis (anthropometric variables) revealed one significant function and 75 % of the cyclists were correctly classified. Uphill cyclists have been reported to be significantly shorter and lighter than other specialists (1, 4) and cyclists' performance will be determined by their anthropometric characteristics (1). Also, UP have a higher VO₂ max/Kg (1, 3, 4). In conclusion, our model confirms that elite cyclists can be classified according to their specialty.

Gábor Géczi et.al., (2009) conducted a study to identify those psychological background factors for three age groups of the national ice hockey teams (U16, U18, U20) that are of the most importance. It was also the purpose of this study to determine the age-related psychological differences which may play a long term role in the ice hockey players' careers. Altogether 95 elite male ice hockey players filled out CSAI-2, ACSI-28, and STPI-Y self-evaluation questionnaires. ANOVA showed no differences among the age groups with the exception of the trait anger scale results

Watson (1988) conducted a study on discriminant analysis of the physiques of schoolboy rugby players, hurlers and non-team members. The subjects were 31 successful schoolboy rugby players and 25 successful schoolboy hurlers; 34 non-team members acted as controls. Thirty-one anthropometric measurements were taken on each subject: height, weight, sitting height, five skeletal lengths, six skeletal diameters, 13 muscle circumferences and four skin folds. The non-players were significantly smaller than the rugby players and the hurlers in weight, biacromial diameter, bideltoid, neck, chest, flexed arm, upper and lower thigh and calf circumferences. The non-players were significantly smaller than the rugby

players in arm length, femur diameter and waist, hip and relaxed arm circumferences. The non-players were significantly smaller than the hurlers in femur length, biiliac and ankle diameters. There were no statistically significant differences between the rugby players and hurlers. Discriminant analysis produced a function containing terms for height, weight, fat free weight, humerus diameter and neck, bi deltoid, forearm and calf circumferences which correctly assigned 83 (92%) of the subjects to 'player' and 'non-player' categories. When the function was applied to the 15 members of the rugby team of a different school, 14 were placed in the 'player' category and one subject was given a borderline classification. It is concluded that there were differences in physique between the team members and non-members and that the techniques used in the study were effective in quantifying them.

Leon et.al., (2002) in their study of identifying anthropometric and biomotor variables that discriminated among groups of elite adolescent female athletes aged 14.3 [+ or -] 1.3 years (mean [+ or -] s) from four different sports (tennis, n = 15; swimming, n = 23; figure skating, n = 46; volleyball, n = 16). The anthropometric variables included body mass, height, bi-epicondylar breadth of the distal extremity of the humerus and femur, maximal girth of the calf and biceps and the sum of five adipose skin folds. The biomotor variables were maximal aerobic power, muscular endurance and flexibility of the trunk. Discriminant analysis revealed three significant functions ($P < 0.05$). The first discriminant function primarily represented differences between figure skaters and all other groups of athletes. The other two underlined anthropometric and biomotor differences between swimmers and volleyball players and between tennis players and swimmers, respectively. After validation, the analysis showed that 88% of the athletes were correctly classified in their respective sports. Our model confirms that elite adolescent female athletes show physical and biomotor differences that clearly distinguish them according to their particular sport.

McNeill and John (2005) examined the motivational achievement goals and beliefs about various aspects of sport in a secondary school that classified students into sport- and non-sport streams. This study cluster analyzed the profile of motivational types and achievement goals in 121 Grade 9 pupils ($n=52$ sport stream, $n=69$ non-sport stream) aged between 14 and 15 yrs ($M=14.18$ yr, $SD=0.48$) and examined the differences in their beliefs about the purposes of sport. Results revealed three-distinct clusters with 33% of the sample with an 'amotivated' profile, 48% in a 'highly motivated' cluster and 19% in a 'high task-mastery' cluster. These three clusters differed significantly in their beliefs about the purposes of sport. Also, 'amotivated' students were less likely to endorse 'mastery and physically active lifestyle' and 'being a good citizen' as purposes of sport compared to the other two clusters (both $P_s < 0.05$). The main difference between the 'highly motivated' and 'high task mastery' clusters was that the former was more likely to endorse 'gaining social status' as one of the main purposes of sport ($P < 0.05$).

Lorenzo et.al., (2010) to identify the game-related statistics which discriminate between winning and losing teams in under-16 years old male basketball games. The sample gathered all 122 games in the 2004 and 2005 Under-16 European Championships. The game-related statistics analyzed were the free-throws (both successful and unsuccessful), 2- and 3-points field-goals (both successful and unsuccessful) offensive and defensive rebounds, blocks, assists, fouls, turnovers and steals. The winning teams exhibited lower ball possessions per game and better offensive and defensive efficacy coefficients than the losing teams. Results from discriminant analysis were statistically significant and allowed to emphasize several structure coefficients (SC). In close games (final score differences below 9 points), the discriminant variables were the turnovers (SC = - 0.47) and the assists (SC = 0.33). In balanced games (final score differences between 10 and 29 points), the variables that discriminated between the

groups were the successful 2-point field goals (SC = -0.34) and defensive rebounds (SC = -0.36); and in unbalanced games (final score differences above 30 points) the variables that best discriminated both groups were the successful 2-point field-goals (SC = 0.37). These results allowed under and that these players' specific characteristics result in a different game-related statistical profile and helped to point out the importance of the perceptive and decision making process in practice and in competition as well.

2.3. STUDIES ON PSYCHOSOCIAL ASPECTS

Naned marelic et.al. (2004) determines success or failure in any sport match, but the measurable part of it is related to the indicators of efficient performance of technical – tactical elements or game phase during the matches. The sample consisting of 76 sets, obtained from 20 matches played by one team in Italian men's A1 league, was used in this study to determine, on the basis of five play-specific situational parameters, the differences between the sets won and the sets lost. A discriminant analysis was used. The discriminant function significantly differentiated between the sets won and the sets lost, at the level of significance $p < 0.00$. The discriminant function was defined by the highest projection of the variable spike in the phase of attack, and by somewhat lower projections of the variables spike in the phase of counter attack, serve reception, block and serve.

Senécal et.al., (2008) determined whether the implementation of a season-long team-building intervention programme using team goal setting increased perceptions of cohesion. The participants were 86 female high school basketball players from 8 teams. The teams were randomly assigned to either an experimental team goal-setting or control condition. Each participant completed the Group Environment Questionnaire (GEQ; Carron, Brawley, & Widmeyer, 2002; Carron, Widmeyer, & Brawley, 1985), which assessed cohesion at both the beginning and end of the season. Overall, the

results revealed a significant multivariate effect, Pillai's trace $F(12, 438) = 2.68, p = .002$. Post hoc analyses showed that at the beginning of the season, athletes from both conditions did not differ in their perceptions of cohesion. However, at the end of the season, athletes in the team goal-setting condition held higher perceptions of cohesion than athletes in the control condition. The results indicated that team goal setting was an effective team-building tool for influencing cohesiveness in sport teams.

Blanchard et.al., (2009) studied the impact of cohesiveness and coaches' controlling interpersonal style on athletes' perceptions of autonomy, competence and relatedness. The proposed sequence was tested with 197 basketball players using structural equation modeling. The hypothesized model was supported. Results: Perceptions of cohesiveness positively predicted the satisfaction of the basic needs. Perceptions of coaches' controlling interpersonal style negatively impacted feelings of autonomy. In turn, psychological needs predicted self-determination in sports ensuing greater sport satisfaction and positive emotions in sports. Tests of indirect effects also supported the mediating role of psychological needs and self-determination. Results are discussed in light of the different types of motivational antecedents and their influence on the psychological needs.

Boiché and Sarrazin (2009) investigated a large number of determinants of sport dropout among French adolescents, in order to reveal proximal and distal factors of dropout. 261 current and 106 dropout athletes ($M = 14.6$) participated to the study. The data were collected by a questionnaire assessing demographic information, athletes' perceptions on their experience, their parents, teammates and coach. t-tests revealed that current and former athletes were distinct on numerous variables. A discriminant function analysis showed three proximal predictors of sport dropout (perceived value of the activity, satisfaction, parents' investment). Subsequent regression analysis showed that perceived value was positively

predicted by perceived competence, the value of the activity for teammates, coach's investment, and negatively by conflicts of interest and goal conflict with teammates; satisfaction was positively predicted by the coach's mastery climate, but negatively predicted by conflicts of interest and goal conflict with teammates and with the coach; parents investment was negatively predicted by the goal conflicts with them. This study permitted to discriminate between proximal and more distal psychological antecedents of the dropout behaviour. It brings information related to the possible targets of interventions aiming at preventing dropouts from organised sport.

Yiannakis and Andrew (1974) this study attempted to find reasons for the large proportion of dropouts in the federal government's National Summer Youth Sports Program. Selected scales of the Jesness Inventory were administered (value orientation, alienation, denial, and occupational aspiration) at the beginning of the program to 66 11-year-old boys enrolled in a 1971 program at a large southwestern university. Measures of occupational aspiration were taken by categorizing responses to open-ended questions, in accordance with Hollingshead's Two-Factor-Index of Social Position scale. A large proportion of this sample was either Mexican American in origin or black. The students constituted the entire population of 11-year-olds in the program (males). The data were analyzed using an IBM 36-65 computer. Step-wise multiple discriminant analysis was performed to test the hypothesis that boys who fail to complete the program have a more delinquent psychosocial profile than boys who complete the program. Group 1, that who completed the program, was composed of 27 boys; Group 2, those who failed to complete the program, was composed of 39 boys. Analysis of data supported the hypothesis. The conclusion that the problem lies in the psychological characteristics of the participants is not entirely satisfactory. The use of team sports in the program might result in alienation of the participants on a smaller scale similar to the alienation they experience in the larger social cultural system.

Tanja and Renata (2009) investigated in a sample of Slovene coaches. Four groups of coaches could be described by two discriminant dimensions. One was interpreted as group leadership, defined by democratic leadership, reports on problems related to coaching, more task than performance orientation, and reduced directivity. The second was interpreted as permissiveness, characterized by weak behavior control, low achievement imperative and a lack of high aspirations, reduced domination, lower openness, poorer social skills and feed-back tendency. Successful athletes' coaches were focused on their trainees' emotions and needs, inclined to democratic leadership; they were dominant personalities ready to talk about the professional problems, unwilling to use social skills to command athletes. Less successful athletes' coaches were less focused on relationships, task oriented, did not show a tendency to include anyone in decision-making, commanded their trainees often and communicated with them a lot, although the meaning and purpose of it was questionable. The coaches in team sports resembled each other regardless of the quality of their trainees. They are differentiated from the individual sport coaches due to less expressed group leadership behavior and lower permissiveness.

Williams and Neil (1991) conducted a study to identify variables that predict the cohesion of co-acting teams. Based on Carron's model, it was hypothesized that cohesion was related to team size, members' satisfaction with opportunities provided by team membership, similarity of members, coaches' efforts to foster cohesion, prior team success (National Collegiate Athletic Association ratings), existence of team goals, and importance of team goals, participation in establishing team goals, intrateam task communication, and prior liking. Subjects were 85 female golfers from 18 Division I intercollegiate teams. Cohesion was assessed by the Group Environment Questionnaire developed by Carron, Widmeyer, and Brawley. Stepwise multiple regression analyses revealed that the nine independent variables collectively predicted a significant amount of the

variance in each of the four aspects of cohesion ($R = 56\%-72\%$). The best single predictor of each cohesiotti aspect was total satisfaction ($R = 32\%-58\%$). Although all of the variables except the importance coaches placed on task cohesion and similarity of background were significantly related to some aspect of cohesion, some variables were more highly related to task cohesion (e.g., prior performance) and others to social cohesion (e.g., prior liking).

2.4. STUDIES ON POSITIONAL WISE ANALYSIS

✓ **Kirkcaldy (1982)** in his study administered the Eysenck personality questionnaire to athletes. By comparing team and individual athletes using uni-variate and multiple discrimination function analysis method, no significant differences were found to exist among the personality dimensions. However, when team sports were considered separately and by categorizing athletes into one of the three classes (offensive, center and defensive players), it was found that males in attacking positions were substantially higher in “Psychoticism (tough minded, dominant, aggressive) and extroversion” compared to mid-field players. The forward, offensive players were less easily differentiated from defensive players, the later group exhibiting a more “emotionally stable” pattern than the offensive athletes. In females the trend was somewhat reversed, that is attacking players were less extroverted and neurotic than players from other positions.

✓ **Terry and Youngs (1996)** Field hockey players ($N = 128$) completed the Competitive State Anxiety Inventory-2 and the Profile of Mood States about 45 min. before a British Universities trial. Single-factor multivariate analysis of variance indicated no significant differences between selected and non selected players for any pre performance mood or anxiety measure. Discriminant function analysis showed that 74 participants (57.81%) could be correctly classified as selected or non selected players on

the basis of pre-performance mood scores. This figure rose to 83 participants (64.84%) when scores on the anxiety subscales were also included in the discriminant function analysis. Anxiety scores alone discriminated 71 participants (55.47%). These results concur with earlier proposals of Terry that psychological state measures decline in predictive effectiveness in long duration, open skill team sports.

Jaime et.al., (2006) examined the differences in game-related statistics between basketball guards, forwards and centers playing in three professional leagues: National Basketball Association (NBA, superior level) in the USA, Association de Clubs de Baloncesto (ACB, one of the best European leagues) in Spain and Liga de Clubs de Basquetebol (LCB, inferior level) in Portugal. For players in each league, discriminant analysis was able to identify game-related statistics that maximized mean differences between playing positions ($p < 0.05$). The interpretation of the obtained discriminant functions was based on examination of the structure coefficients greater than $|0.30|$. In the LCB league, centres and guards were discriminated mainly in terms of defensive tasks, with emphasis on blocks (structure coefficient, $SC=0.35$) and defensive rebounds ($SC=0.43$) and a de-emphasis on unsuccessful 3-point field-goals ($SC=0.37$). In the ACB, centres and guards were discriminated by offensive tasks, with emphasis on assists ($SC=0.52$) and 3-point field-goals, both successful ($SC=0.35$) and unsuccessful ($SC=0.35$), and a de-emphasis on offensive rebounds ($SC= 0.44$). Finally, in the NBA league guards and centres were discriminated by offensive tasks, with emphasis on offensive rebounds ($SC=0.31$) and a de-emphasis on assists ($SC=0.37$) and unsuccessful 3-point field-goals ($SC= 0.34$). These three analyses provided high overall percentages of successful classification (86% for the LCB league, 74% for the ACB and 85% for the NBA). Generally, the players' game-related statistics varied according to playing position, probably because of the well-known differences in the players' anthropometric characteristics that

conditioned the distance they play from the basket. Coaches can use these results to reinforce the importance of relying on different players' contributions to team performance and evaluate players' game performance according to their playing position. Conversely, these discriminant models could help in player recruitment and improve training programmes.