CHAPTER-III

METHODOLOGY
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The procedure pertaining to the selection of subjects, selection of variables, Orientation of subjects, reliability of Multi dimensional assessment of personality (MAP) series reliability and validity of the tool, scoring system of the tool, description of personality traits and validity index, test administration, experimental design and statistical techniques used have been vividly presented in this chapter.

SELECTION OF SUBJECTS

To achieve the purpose of the study, the investigator has selected 216 male hockey players of different districts of TamilNadu and professional teams at Chennai TamilNadu, India who took part in state level inter district and Chennai district league tournaments held at Chennai during the year 2007. MAP series (adaptability, academic achievement, boldness, competition, creativity, enthusiasm, excitability, general ability, guilt proneness, individualism, leadership, innovation, maturity, natural health, morality, self control, sensitivity, self sufficiency, social warmth and tension) was administrated for all the 216 samples, out of which 144 players were scored 1–6 in validity index (VI). These 144 players were selected as subjects for this study. The selected subjects were in the following categories.

(a) Level of Players:

- State level - 125
- National level - 19 (International)

Total - 144
(b) Age group:

- Less than 20 years - 27
- 21 – 25 years - 54
- 26 – 30 years - 28
- More than 30 years - 35

**Total - 144**

(c) Position:

- Forward - 54
- Half back - 42
- Full back - 32
- Goal keeper - 16

**Total - 144**

The age of the subjects ranged between 17 to 35 years. The subjects were selected from the following districts and professional teams of Tamil nadu. (Tirunelveli, Chennai, Tanjore, Madurai, Trichy districts) and (IOB, Indian bank, ICI, FCI, central excise, southern Railway, SAI, SDAT, Tamil nadu police, SBI, TNEB, Madras Regimental Corps (MRC) and port trust Chennai.)

**SELECTION OF VARIABLES**

The excellent performance of the present day athletes depends upon the complex blend of physical, physiological, anthropometric and psychological traits.

Physical traits and psychological traits go hand in hand. So, modern sports are laying greater emphasis on work of preparing the athletes psychologically and physically because both play significant role. Several investigations in this regard have revealed that psychological makeup among the players has made them come out with flying colors.
Singh, H. (1982) opines that “The performance is not only the result of motor abilities and skills but also of the psychological and social capabilities of the sportsman. The ideas, beliefs, interests, motivation, moral qualities and personality traits, are important as motor abilities and skills in achieving performance. The sports performance is the result and expression of the total personality of the man”.

No single aspect of personality is considered as isolated entity and nor considered more important than others. The dynamic connotation of personality is, that if the individual is not conscious of himself, his strive towards improving his personality will not have any meaning. Self consciousness helps to evaluate oneself, whether one is superior or inferior in one’s own estimation in relation to one’s previous status or that of others. Self consciousness gives raise to traits like dominance, self-esteem and pride. This may lead to self realization and self analysis which are very helpful to the individual in the long run for making good adjustment in life. It helps to develop one’s personality in various ways acceptable to the society.

Hence the research can conclude that, higher level of performance depends upon the psychological make up of the athletes. So psychological traits dominates. If a player has acquired the required level of personality traits, he would be psychologically fit for the game. After analyzing the various factors associated with the problem personality traits. MAPS (adaptability, academic achievement, boldness, competition, creativity, enthusiasm, excitability, general ability, guilt proneness, individualism, leadership, innovation, maturity, natural health, morality, self control, sensitivity, self sufficiency, social warmth and tension) were selected as dependent variables for this study.
Further, the researcher selected the following as independent variables,

(a) Level of Players:
   - State level and
   - National level

(b) Age group of players:
   - Less than 20 years
   - 21 – 25 years
   - 26 – 30 years and
   - More than 30 years

(c) Position:
   - Forward
   - Half back
   - Full back and
   - Goal keeper

**ORIENTATION OF THE SUBJECTS**

Before administering the MAP series tests, the investigator briefly explained to the subjects the importance of the study without revealing the contents of MAP form questionnaire. The subjects were briefly explained the method of answering the questionnaire and were verbally motivated to give unbiased responses to the questions in order to collect correct data.

**Tool used in the study**

Multi – dimensional assessment of personality series (MAP series) 1993 Psy-com services. *Appendix: 1.*
RELIABILITY OF THE DATA

The testing procedure was started only after establishing reliability. Reliability of the data was established by test and retest process where consistency of scores were statistically tested by computing the intra class co-efficient of correlation was used to find out the reliability of the data as suggested by Johnson and Nelson (1982) and the obtained ‘R’ values were much higher than the required value (min – 0.83 and max – 0.94 required value for significance at 0.05 level is 0.77), the data were accepted as reliable in terms of tool (MAPS), tester and the subjects.

ORIGIN AND BACKGROUND OF THE TOOL

The multidimensional assessment of personality series (MAP series) has something different from the majority of other test constructions.

The MAP test construction belongs in the realm of structured tests, i.e., tests that are shaped to the structures that basic research has shown to be essential elements of human personality in our culture.

The MAP series is the psychologist’s answer, in the questionnaire realm, to the demand for a test giving fullest information in the shortest time about most personality dimension / indexes.

It can be used as a group or individual test, for a age range of five years and above.

There are special considerations which raise the utility of MAP series.

1. Some of the finest factor analytic research has been devoted to its construction on a very broad sampling of the area of personality response.
2. The statistical treatment resulted in a true personality structure, revealing functionally independent dimensions.
The questionnaire meets a long-standing demand for a personality measuring instrument, properly validated with respect to the primary personality dimensions that are rooted in general personality research.

**DESIGN AND PURPOSE OF THE TOOL**

Although the questionnaire type of personality test is a mistake to assume that it is a universally valid instrument. Its results differ somewhat as between cooperative and non-cooperative, well educated and poorly educated, honestly and ulteriorly-motivated subjects. Questionnaires have so far been shown to have their, most valid application with students or with co-operator, anonymous subjects under research conditions.

The majority of questions in the MAP series are indirect, asking about interests which the subject would not necessarily perceive to be related to the trait in question, so that it escapes some of the distortions described. MAP series does not interpret the dimensions from the nature of the subject’s statements about himself, but from the known correlations between these “mental interiors” as found in the questionnaire dimensions and dimensions established in behavior. In other words responses are treated as behaviour and not as valid self ratings.

The subjects make their responses on the booklet in self. Three alternative answers to each item are provided to the subjects. The booklet can be hand scored with the help of scoring stencils. The MAP series measures the same demonstrated personality dimensions at different ages by providing a sequence of scales. Thus it fulfils the purpose for which it has been framed.
RELIABILITY

The reliability or internal consistency is important to study, i.e., the agreement of dimension scores with itself under some change of conditions. Therefore the reliabilities of the MAP form were calculated as split-half reliability and test-retest reliability co-efficient with one week interval. The results obtained are shown in Table 1.

For calculating the split-half reliability, a trial run of the tool was conducted. The reliability was computed for over 800 subjects using spearman-Brown formula. The tool was divided into two parts using odd-even method and care was taken to endure that each half contained more or less the same number of questions. The test retest reliability was also calculated for the tool by calculating the correlation of co-efficient between two sets of scores of the same individual on same tool, with one week time interval. The sample size for test-retest reliability was approximately two subjects.

VALIDITY

The basic definition of validity is that, it is an index of how well a tool measures what it purports to measure. The validity of MAP form has been proved by factorial validity co-efficient with a range value between .77 for (Am) dimension and .85 for (Co) dimension.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Test-Retest</th>
<th>Dimension</th>
<th>Split-Half</th>
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</thead>
<tbody>
<tr>
<td>Ad</td>
<td>.60</td>
<td>Ad</td>
<td>.71</td>
</tr>
<tr>
<td>Am</td>
<td>.68</td>
<td>Am</td>
<td>.65</td>
</tr>
<tr>
<td>Bo</td>
<td>.73</td>
<td>Bo</td>
<td>.75</td>
</tr>
<tr>
<td>Co</td>
<td>.69</td>
<td>Co</td>
<td>.72</td>
</tr>
<tr>
<td>Cr</td>
<td>.65</td>
<td>Cr</td>
<td>.64</td>
</tr>
<tr>
<td>En</td>
<td>.72</td>
<td>En</td>
<td>.72</td>
</tr>
<tr>
<td>Ex</td>
<td>.69</td>
<td>Ex</td>
<td>.64</td>
</tr>
<tr>
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<td>Ga</td>
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</tr>
<tr>
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<td>.68</td>
<td>Gp</td>
<td>.66</td>
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<tr>
<td>Id</td>
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<tr>
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<td>.71</td>
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<td>Tn</td>
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<td>.74</td>
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Administration of tool

The tool has been printed on a eight page booklet. The front page contains the instructions for answering the questions with few examples. Pages 2 to 8 contain the actual test items to be answered by the subjects. The test can be administered both individually and in group situations. An average subject may take 25-30 minutes to complete the test in full. However there is no time limit specified to complete the test. The MAP series has been designed for self – administration with little supervision required.

The investigator has not indicated to the subject that form printed on the booklet stands for “Multi-dimensional assessment of personality”. If at all any statement have to be made about the nature of the tool, it should be referred to as attitude or interest. In addition to this, the subjects were further instructed to: -

(i). Answer the questions correctly and truthfully.
(ii). To remember to avoid using ‘Not sure’ ‘uncertain’ or ‘undecided’ type of choices unless is felt absolutely necessary.
(iii). To be sure not to miss any question.

The booklets were collected by the investigator after the completion of the test.

SCORING SYSTEM OF THE TOOL

The scoring procedure in MAP form is quite objective and simple. Transparent stencil scoring keys are available for this purpose.

(a) Before starting the scoring procedure, the investigator should ensure that the subject has answered all the questions in the booklet.
(b) If more than 15 questions are skipped the test is invalid and should not be scored. This should however, be checked and corrected during administration of the test.

(c) Should ensure that each question has one and only one answer.

(d) Place the key over the column of answer. Boxes on the inside left page (page no 2) of the test booklet. Be sure that the mark (O) on top and bottom of the booklet shows through the check boxes of this key.

(e) Each answer scores either 2 or 1 as indicated by the numbers printed above the boxes, the only exception being the “Ga” dimension where the answers are scored 2 and 0.

(f) Scores should be added for each dimension and written down at the bottom of the booklet in the space provided for that dimension.

(g) Each item in this test measures some or the other dimension as indicated in the key.

(h) This procedure shall be repeated for pages 3,4,5,6,7 & 8 also.

(i) Scores for dimension “Vi” in all the pages should be added to obtain the total raw score for “Vi” on the test.

(j) These scores should be plotted on the profile sheet provided with the test material.

(k) Raw scores should be converted in to step scores by using the procedure mentioned in the manual.

**DESCRIPTION OF PERSONALITY TRAITS VALIDITY INDEX**

1. **Adaptabilities (Ad):** This dimension refers to the ability to make appropriate response to changed or changing circumstances. Those who score high on (Ad) reading accept the any beneficial changes to meet the environmental demands and are said to be highly adaptable. They settle down to the
conditions for work or learning with the elimination of unnecessary preparatory behaviour. Those who score low on (Ad) do not have a Harmonious relationship in their environment and are unable to obtain satisfaction for most of their needs.

2. Academic Achievement (Am): This is a sentimental dimension consisting mainly of two attitudes. "Learning skills" and "inclination to climb". Those who score high on dimension (Am) may be described as ambitious, overtly interested in their position and realistically involved in various aspects of life. Those who score low on (Am) indicate regressive behaviour, escapism and unwillingness to accept responsibility. Feelings of failure may also tend to decrease this score.

3. Boldness (Bo): High scoring individuals on dimensions (Bo) are typically adventurous, bold and energetic with good insight. They are like insulated buildings, which can withstand external pressure without expending much energy in doing so. Low scoring individuals on dimension (Bo) are reported to be intensely shy, slow and impeded in expressing themselves. They are like less insulated buildings, and hence penetrations of external stresses are easy. They expend more energy to maintain equilibrium.

4. Competition (Co): This dimension is related to leadership behaviour. High scoring individuals on (Co) are self assertive, dominant, aggressive, tested, independent and creative. They are forceful and are generally very direct in their relations with other people. They like to put their own ideas into practice and enjoy having thing in their own way. Low scoring individuals on (Co) are submissive, mild, humble and accommodative.

5. Creative (Cr): High scorers on (Cr) are reserved and critical thinkers. They tend to be independent, undemonstrative, and high on scholastic and mental ability. They are sensitive to scientific reasoning and experimental thinking.
They are self-assured, self-sufficient and self-sentimental about their image. Low scorers on (Cr) are dull, emotionally less stable, and impatient and threat sensitive.

6. **Enthusiasm (En):** This dimension may be treated as a behavioral control indicator. High scores on (En) are generally happy-go-lucky, lively and enthusiastic. They will externalize or act out inner conflicts. Low scores on (En) are serious, prudent and sober and will internalize or control their inner conflicts.

7. **Excitability (Ex):** This dimension is a combination of immediate temperamental quality, mind-wandering distractibility, insecurity and repressible impulsiveness at first sight. High scores on (Ex) are abnormal, can be easily distracted. Low scores on (Ex) are complacent, not easily jealous and unemotional in nature.

8. **General Ability (Ga):** High scoring individuals on (Ga) have a greater mental capacity to learn. They are insightful, fast-learning and intellectually adaptable. They are also inclined to have more intellectual interest and show better judgments in their observations. Low scoring individuals on (Ga) have a poor mental capacity to learn and are unable to handle abstract problems. They tend to be less organized and show poor judgment in their observations.

9. **Guilt-Proneness (Gp):** High scores on (Gp) feel over fatigued by exciting situations, are unable to sleep through working, feel inadequate to meet the rough remorseful, they feel that people are not as moral as they should be. They do not feel accepted shy, in effective speakers and hinderers. They are poor in spirit.

10. **Individualism (Id):** High scores on (Id) prefer to do things on their own, are physically and intellectually obstructive, they think over their mistakes
repeatedly and methods to avoid them. They tend not to forget is they are
treated unfairly and generally have private views from the group, but prefer
to remain in the back ground to avoid arguments. Low scores are zestful and
highly involved in group action. They may not come out as group leaders but
like to sink themselves in group activities. They are ready to accept common
standards.

11. Innovation (In): High scores on the dimension (In) tend most frequently to
be analytical, liberal and innovative. They are well informed, more inclined
to experiment with problem solutions, they trust logic rather than feelings.
Neurotics tend to run low on dimension (In).

12. Leadership (Ld): High scores on (Ld) dimension have the ability to direct
and control the attitudes or actions of others. They posses high leadership
qualities. They are self confident and have strong will power. They are
adventurous, responsive to people, persevering, determined, and responsible,
plan full and are usually quick and alert in their surroundings. Low scores on
(Ld) are undependable, obstructive and prefer to sound followers. They are
group dependent and impatient and are likely to escape when faced with
responsibility.

13. Maturity (Ma): High scores on (Ma) dimension have more stress tolerance
and have more resources to meet the challenges of the day.

Low scores (Ma) will be easily annoyed by things and people, are dissatisfied
with the world situation, and family.

14. Mental Health (Mh): The (Mh) dimension consists of various other
personality characteristics such as emotional stability, impulsivity, and self­
security and low tension. High scoring individuals on dimension (Mh) are in
a relatively enduring state in which they are well adjusted, have a zest for
living, and are attaining self-actualization or self-realization. They are
generally able to reach personal goals without much difficulty. They do not seem to be easily distracted when working on something and have general satisfaction with the way they have lived their lives.

15. Morality (Mo): Who score high on (Mo) dimension tend to be more persistent, more respectful of authority, and more conforming to the standards of the group. They are good academic achievers and popular leaders. Who score low on (Mo) dimension tend to be institutionalized delinquents, associated with behaviours such as showing-off, stealing, lying, destruction of property and temper tantrums. The scores of (Mo) play an important role for evaluating character.

16. Self Control (Sc): The dimension may be treated as the ability to blind anxiety. High scores on (Sc) dimension generally have strong control over emotional life and behaviour in general. They show socially approved character responses, behaviour control, persistence, foresight, considerateness of others, and conscientiousness. They are associated with scholastic success. Low scores on (Sc) are associated with delinquency.

17. Sensitivity (Se): High scores on (Se) dimension are tender minded, dependent, overprotected, fidgety, clinging and in secured. They prefer to use reason rather than force in getting things done. High scores also avoid tough and adventurous situation. Low scores (Se) dimension represent some sort of tough, masculine, practical, nature, group solidarity generating and realistic temperament.

18. Self-Sufficiency (Ss): High scoring individuals on (Ss) dimension prefer to be alone. They do not need the support of groups in describing themselves. They prefer to work alone and are good at problem solving by themselves. Low scoring individuals on (Ss) dimension are group dependent, who strongly value social approval. They are fashionable.
19. Social Warmth (Sw): High (Sw) scores are usually found to be very warm hearted, personable and easy to get along with. They enjoy social recognition and are more tolerant. They prefer to adapt to others schedule rather than require others to adapt to their schedules. Low (Sw) scores indicate unsatisfied inter personal relationships and more penetrating in their evaluations of people and things.

20. Tension (Tn): High (Tn) scores are irritated by small things, are short tempered and may suffer from sleep disturbances. Extreme cases (stan 9-10) in involves being irrationally worried, tense, irritable, anxious and turmoil. In group situations high scores rarely achieve leadership and have a poor concept of group units and orderliness. They are prone to sports accidents.

21. Validity Index (Vi): It is assumed that the subjects are motivated towards showing themselves in the most favourable light. In order to check this error a validity index or “lie” index has been developed. The MAP form consists of 147 items out of which 140 are dimension questions (measuring 20 personality dimensions) and 7 questions are validity index questions, to give “validity index” score (Vi score). The validity of the subject answers on the actual questions included in the test can be estimated from the subject’s score on validity check questions in terms of (Vi) score. Higher the (Vi) score, the chance of are greater to get scores with higher distortion and bias in the personality dimensions scores MAP lower the (Vi) score, proves that the subject has been honest answering the questionnaire and the personality dimensions (MAPS) scores are valid. (MAP Series - 1993).
Interpretation of (Vi) Score

<table>
<thead>
<tr>
<th>(Vi)sten Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 3</td>
<td>No distortion – there is no distortion. MAP form scores are quite accurate.</td>
</tr>
<tr>
<td>4 - 6</td>
<td>Low distortion scores are fairly accurate and retesting not required.</td>
</tr>
<tr>
<td>7 – 9</td>
<td>High distortion – scores are not very reliable. Desirable for the individual to take the test again after some time.</td>
</tr>
<tr>
<td>10</td>
<td>Extremely high distortion – scores should be discarded. The subject should be warned and persuade to take the test again.</td>
</tr>
</tbody>
</table>

EXPERIMENTAL DESIGN AND STATISTICAL ANALYSIS

In this study, static group comparison design has been used. It involves four categorical variables such as forward, half back, full back and goal keepers in hockey. Twenty dependent variables (personality traits) as stated earlier were taken into consideration for statistical analysis.

One way analysis of variance of independent group was applied to determine significant variation, if any, for different level of players (state and national), different age groups (below 20 years, 21 – 25 years, 26 – 30 years and above 30 years) and different position of hockey players such as forward, halfback, full back and goal keepers, on selected personality traits. The level of confidence was fixed at 0.05 for significance. Scheffe’s test was applied as a post hoc test, if the obtained F – ratio was found to be significant.
**Discriminant Analysis**

With the help of F-ratio, it is possible to know the individual characteristics which discriminate any two samples. However, it is quite possible, a characteristics which could not discriminate two samples might discriminate the same pair of samples when it is considered along with some other characteristics, i.e., a combination of characteristics which have some association with one another might discriminate between the samples, even though, singly those characteristics do not discriminate between the samples. To identify such a combination of characteristics called “Group Characteristics” which might discriminate different pairs of samples, discriminant analysis has been employed to process the data.