CHAPTER - III

METHODOLOGY
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In this chapter, the methodology used in selection of subjects, selection of variables, description of psychological inventories and measures of physiological variables, collection of data and statistical technique for analyzing the data are presented.

3.1 SELECTION OF SUBJECTS

To achieve the purpose of the present study, as subjects, the players totally 60, who participated in the 15th Shri N. Muthiah Ambalam Memorial State Level Intercollegiate Volleyball Tournament conducted by the American College, Madurai, TamilNadu, India in the year 2004. This state level inter­collegiate volleyball tournament is considered as the second biggest tournament in the state of Tamilnadu, India. The selected subjects were in the age group of 18-24, whose socio-economic background was heterogeneous.

3.2 SELECTION OF VARIABLES

Generally, mind is the prime mover for all success of human moves in every day life since it directs all the physical and physiological systems as well as the mind set. In sports, very specifically in high level competition, psychological traits of a player are highly associated with changes incurred in the individual physical and physiological systems. Now a days participants have been forced to win either because of personal needs or needs of others. Such a forceful situation easily accommodates the players to anxious and threatful situations. It totally affects the perceptual mechanism of individuals. With these basic functions, to spot out the psychobiological traits related to
overall playing ability of volleyball players, the investigator selected the variables, namely, fear of experiencing shame and embarrassment (FSE), fear of devaluing one's self's estimate (FDSE), fear of having an uncertain feature (FUF), fear of important others losing interest (FIOLI), fear of upsetting important others (FUIO), general fear, cognitive anxiety, somatic anxiety, self confidence, systolic blood pressure, diastolic blood pressure, heart rate and body temperature.

3.3 TOOLS USED

To measure the criterion variables used in the present study, the tools employed are: Competitive State Anxiety Inventory – Form 2 (Rainer, 1986), The Performance Appraisal Inventory (Conroy, 2003), Sphygmomanometer, Stethoscope and Bio-monitor. The tools mentioned above are standardized and well established reliable ones. As far as measuring the age of the subjects, the date of birth entered in the eligibility form produced by the subjects of the concerned team at the tournament was used. The descriptions of tools used above are explained hereunder.

3.3.1 Description of CSAI-2

The CSAI was revised to develop a sport specific inventory that measured the cognitive and somatic components of A-state. The CSAI-2 was originally constructed to include subscales to measure not only cognitive state anxiety and somatic anxiety but also fear of physical harm and generalized anxiety. The development of CSAI-2 as a sport specific measure of multidimensional A- state inventory designed to measure existing state of
cognitive anxiety, somatic state anxiety, and state of self confidence in competitive situations. The CSAI-2 was constructed primarily as a research tool to be administered three hours before competition. When administering the CSAI-2, it was recommended that the title on the form given to the subjects to be the Illinois self evaluation questionnaire. This technique helps to reduce the bias to the inventory. In addition, antisocial instructions given by the investigator of CSAI-2 was committed to memory and orally communicated with conviction to the respondents. Before allowing subjects to begin completing the CSAI-2, it was made sure that instructions were completely understood and particularly that responses should be based on how the respondents felt at the moment. The reliability coefficients for the CSAI-2 range from .79 to .90 for the three subscales: cognitive anxiety, somatic anxiety and self-confidence (Marten, Vealey & Burton, 1990).

3.3.2 Scoring the CSAI-2

The CSAI-2 is scored by computing a separate total for each of the three sub scales with scores ranging from low of 9 to high of 36. The higher the score, the greater the cognitive or somatic. A state or the greater the state of self confidence. Total score for the inventory was not computed.

The cognitive state anxiety sub scale is scored by totaling the responses for the following nine items 1,4,7,10,13,16,19,22 and 25. The somatic state anxiety sub scale is scored by adding the responses to the following nine items 2,5,8,11,14,17,20,23 and 26. Scoring for item 14 must be reversed in calculating the score for the somatic state anxiety sub scale as indicated below:
1 = 4
2 = 3
3 = 2
4 = 1

The state of self confidence subscale is scored by adding the following items 3, 6, 9, 12, 15, 18, 21, 24 and 27.

Responses that are missing no more than one response per subscale can still be scored, but any inventory in which two or more items from any one subscale omitted should be invalidated. To obtain subscale scores, when an item is omitted, the researcher computed the mean item score for the eight answered items, multiplied this value by 9, and then rounded the product to the nearest whole number.

3.4 DESCRIPTION OF THE PERFORMANCE FAILURE APPRAISAL INVENTORY

The Performance Failure Appraisal Inventory measures the strength of individuals' beliefs in five aversive consequences of failing. It consists of 25 items. These 25 items were segmented into five subscales namely a) fear of experiencing shame and embarrassment, (b) fear of devaluing one's self estimate, (c) fear of having an uncertain future, (d) fear of important others losing interest, and fear of upsetting important others. Of the 25 items, the items 10, 15, 18, 20, 22, 24 are related to fear of experiencing shame and embarrassment, items 1, 4, 7 and 16 are related to fear of devaluing one's self estimate, the items 2, 5, 8, and 12 are related to fear of having an uncertain
future, the items 11, 13, 17, 21, and 23 are related to the fear of important others losing interest and the items 3, 6, 9, 14, and 19 are related to the fear of upsetting important others. Finally, the general fear of failure is the average of all subscales. The response scale towards each item was graded as follows: -2 for Do not believe at all, -1 for in between Do not believe at all and believe 50% of the time, 0 for believe 50% of the time, +1 for in between believe 50% of the time and believe 100% of the time and +2 for believe 100% of the time. The Performance Failure Appraisal Inventory was administered two hours before competition to measure the subscales and general fear of failure of subjects. Further, it was ensured that instructions were completely understood and particularly that responses should be based on how the respondents felt at the moment before allowing subjects to begin completing the Performance Failure Appraisal Inventory. As for as reliability and validity of the PFAI was concerned, its scores have demonstrated sound psychometric properties, including factorial invariance across groups and over time, internal consistency, external validity, and predictive validity. Scores have also exhibited evidence of differential stability (i.e., test-retest reliability ≥ 0.80), and latent mean stability (Conroy et al., 2003).

3.4.1 Scoring

The average response of subjects towards the items: 10, 15, 18, 20, 22, 24 and 25 is the score of fear of experiencing shame and embarrassment, items 1, 4, 7 and 16 is the score of fear of devaluing one’s self estimate, items 2, 5, 8, and 12 is the score of fear of having an uncertain future, items 11, 13, 17, 21, and 23 is the score of fear of important others losing interest and items 3, 6, 9,
14, and 19 is the score of fear of upsetting important others. The average performance of all sub scales is the score of general fear of failure. The Scores are provided for each of these five lower-order fears of failing: (a) fear of experiencing shame and embarrassment, (b) fear of devaluing one’s self estimate, (c) fear of having an uncertain future, (d) fear of important others losing interest, and fear of upsetting important others. These scores moderately to strongly correlate with each other and their common variance can be modeled with higher order factor representing a general fear of failure. This general fear of failure can be interpreted as the strength of an individual’s belief that failure is generally associated with aversive consequences.

3.5 ORIENTATION OF SUBJECTS

In the view of getting the quality in data from the subjects, the investigator has taken care as follows. In the present study, the criterion variables were measured before three hours of competition. Since the period of measuring is very crucial for the team manager and players, having the player’s attitude of what they actually feel about the competition on needed psychological traits such as cognitive anxiety, somatic anxiety, self confidence and traits related to fear of performance failure, the investigator was intended to make them aware of the present study. For this, initially the theme objectives and the tools to measure the psychobiological traits of the present study were clearly explained to the team manager whereby their consent was obtained. Then in the presence of the team managers, the same was explained to the players and their consents also obtained.
3.6 ADMINISTRATION OF THE INVENTORIES

Using the standardized tools, 60 volleyball players who participated in the state level tournament were tested on criterion variables namely fear of experiencing shame and embarrassment (FSE), fear of devaluing one's self's estimate (FDSE), fear of having an uncertain feature (FUF), fear of important others losing interest (FIOLI), fear of upsetting important others (FUlO), general fear, cognitive anxiety, somatic anxiety, self confidence. Of them, based on the incomplete response towards psychological traits, 11 respondents were not taken into account. Finally 49 respondents were selected and considered for testing the objective of the present study.

The investigator collected the data from the subjects during their rest time. The purpose of the study was clearly mentioned. The investigator explained the subjects about the uses of the questions and meaning of each question and how to fill the questionnaire. Care was taken to see that the subjects answered the entire questions. The subjects were asked to answer the questions individually. It was assured to the subjects that their responses would be kept confidential and would in no way influence their performance and therefore they could give honest response without any sense of fear or apprehension. The filled up questionnaires from respondents were collected after checking that all the items had been responded. Using the scoring key, the total scores obtained by each subject were tabulated.
3.7 ADMINISTRATION OF THE TEST

Blood Pressure (Systolic Pressure & Diastolic Pressure)

Purpose

To measure the systolic and diastolic blood pressure of the subjects.

Equipment

Sphygmomanometer and stethoscope

Procedure and Scoring

The cuff of the sphygmomanometer was wrapped around the bare arm above the elbow. With the earphones of the stethoscope in the tester's ears, the bell of the stethoscope was placed on the brachial artery just above the hollow of the elbow. The cuff was pumped up until the artery has been collapsed, i.e. no pulse beat could be heard. Pressure was then slowly released as the tester watched the gauge or mercury column. When the first sound of the pulse was heard, the reading in millimeters of mercury at that instant was recorded as systolic pressure. The tester continued to slowly release the pressure until a very dull, weak beat was noted. At that instant the pressure in millimeters of mercury was noted, which represented the diastolic pressure. The measures were recorded with the systolic pressure first, then the diastolic pressure (Chakrabarti et al. 1984).
Heart Rate

Purpose

To measure the resting heart rate of the subjects

Equipment

Stethoscope

Procedure and Scoring

To take the resting heart rate, the subject was asked to lie down on the table comfortably. The chest-piece of the stethoscope was applied on the 5th belt intercostals space of the body. The heart rate was recorded by hearing the sound lub-dub which was taken as one beat. The normal heart rate ranges from 60 to 90 per minute. The average heart rate in human beings is about 72 beats/minute count the total beats in the one minute. It was expressed as beats per minute (Chakrabarti et al. 1984).

Body Temperature

Objective

To measure the body skin temperature of the subjects

Equipment

Temperature monitor of the Bio-monitor was used to measure the body skin temperature.
Procedure

The body skin temperature of the subjects was monitored through the temperature monitor of the Bio-monitor. It monitors the skin temperature using the method of thermo-sensing with the help of semi-conductor multipurpose thermal.

The investigator inserted the thermal sensor into the arm pit and waited for 40 seconds for the thermal conduction and stabilization of the body temperature. The investigator depressed the push button TEMP switch and read the temperature on the digital meter.

Overall Playing Ability

Overall playing ability is a composite factor. Since no one standardized test is available to measure this in the game of volleyball, expert rating method was employed to measure the overall playing ability of volleyball players as traditionally and a valid tool. As for as the expert rating method used in the present study was concerned, the expertise of three persons in the field of physical education and sports was sought. To ensure the quality of data in the overall playing ability great care was taken in selecting the experts. As competency of experts, the quality and qualifications in nature and nurture of the experts were as follows. Of the three experts, Dr. V.Perumal, served as one of the experts. He works as a Selection Grade Lecturer in Physical Education, and being served as a trainer, coach, and selection committee member for the inter-collegiate and university level teams for more than two decades. Dr. P. Kaliaselvan served as another expert in measuring the overall playing ability of the samples. To his credit, he is basically a Coach in Volleyball, serving as a trainer, coach and selection committee member for the team at various
levels such as inter-collegiate, district, university, and State for nearly more than two decades. The investigator himself also served as one of the experts in assessing the overall playing ability of samples. In the game of volleyball, the investigator basically as a state level volleyball player have had an experience as a trainer, coach and selection committee member for the inter-collegiate and university level team nearly two decades. In measuring the overall playing ability, experts were accounted the performance of players on fundamental skills, technique and tactics during the game situation and measured these using the 0 to 10 point scale using subjective measurement. The three experts score average on rating the overall playing ability of volleyball players were considered as score of the overall playing ability. Thus the overall playing ability of samples was measured.

3.8 STATISTICAL PROCEDURE

The data were collected on the selected psychobiological traits of men volleyball players at state level. To achieve the primary objective of the present study of spotting the most influential psychobiological traits of volleyball players, an appropriate statistical technique-stepwise regression analysis using enter method was employed on collected data. The results of the data have been given in the ensuing chapter.