Chapter-V

SUMMARY CONCLUSION AND RECOMMENDATIONS

The handball game is fastest game which ranked 2\textsuperscript{nd} in sports world after ice hockey. Peak performance age for sports person in different disciplines is tightly associated with the time to start sports training in a particular sport discipline and required to develop the necessary, conditional, tactical, technical abilities and sports performance. With regard to weight, height, body size, body composition, certain dimension is necessary for success in selected events and sports. Age, height, body weight, body size and body composition of the Olympic, International and national athletes have been subject of great interest for many research workers.

“Physical and physiological profiles may contribute to understanding the suitability of players for the sport of handball, particularly at a high standard of play. Therefore, handball requires a combination of resistance and endurance training. In this game, movement patterns are characterized as intermittent and change continuously in response to different offensive and defensive situations” (Deng PL, Lin ZHR, Xia HQ, Cheng YH (1990).

The Competitive sports demand event specific physique and body composition to achieve the success. \textbf{De Garay et al.}(1974) concluded that top-level performance in a particular event demands a particular type of body size and shape, if other aspects are being similar. They showed high correlation between the body profile of an athlete and specific task (event) in which he/she excelled. Various other studies also suggest that different body sizes, shapes and proportions are beneficial in different physical activities. \textbf{Hirata (1966)} suggested that a nation with people whose general physique is limited to the characteristics of champions
in certain events must concentrate their sports training on those specific events only. He also concluded that Japanese with small body-builds are best for gymnastics, long-distance running, boxing and weight lifting etc. whereas the Americans who are large and lean are best for basketball, female Handball, swimming, long jump, short and middle distance running. Carter (1982) suggested that the athletes who wish to achieve success in sports at a high level should compare their physique with Olympic athletes. If the athlete's bodily structure is within the limit of the Olympians, he/she may achieve high performance subjected to the optimization of other factors. Behnke and Royce (1996) concluded that long distance runners are characterized by excessive leanness, relatively small body size and a deficiency of arm girth compared to chest size and leg length. The anthropometric and compositional study on cross-country runners revealed that runners are characterized by a relatively large calf and small biceps and abdominal girths. Mc Ardle et al. pointed out that athletes generally have physique characteristics unique to their specific sports. For example field event athletes have relatively large quantities of lean tissues and a high percentage of body fat whereas long distance runners have the least amount of lean tissue and fat mass. He also pointed out that football players are amongst the heaviest and leanest of all sports men.

We can experience the conditions of athletes at a time of poor performance. At this time, they are uptight and anxious. The nature of anxiety is shown by a feeling of apprehension and uncertainty and the experiencing of physical symptoms like butterflies in the stomach, sweaty palms and a thumping heart. More than any thing else, during the competition one can feel these anxiety symptoms. The tendency for individuals to remain anxious in sport has made ready
investigators to attempt to identify the sources of anxiety and to know how different individuals perceive them.

An understanding of achievement motivation is helpful in understanding kinds in general as well as individually in terms of what they do, how was they do and how long they continue in sports once one comes to know as to that works as a “driving force” it becomes easier to guide the athletes in to achieving excellence. When the aspire for good achievement becomes a dominant concern for the sports person, it is expressed with restless driving energy aimed at achieving excellence, getting ahead, improving own past records, beating competitors, doing things better, faster, more efficiently and findings unique solution to difficult problems.

This study is a primary kind of attempt to highlight the differences between high and low performance female handball players in relation to their anthropometrical and psychological variables. It aims to find out the natural and nurtured traits of female handball players, which makes them high or low performers.

The aim of this research work was to place the role of anthropometrical and psychological variables on the performance level of Indian handball players.

For this purpose 100 female handball players (50 high performance and 50 low performance level) were selected. The High performers were selected from All India inter-varsity winners and runners held at Periyar University Salem on Feb. 2013, and Low performers were selected from District, state, zonal and inter-varsity players.
The study were delimited to selected anthropometrical parameters i.e. Stature, sitting height, weight, femur biepic condyler diameter, humerus biepic condyler diameter, shoulder width, hip width lower arm length, upper arm length, lower leg length, thigh length, biceps muscle girth, calf muscle girth, skin folds (biceps, triceps, calf, suprailiac and sub-scapular skin folds), wrist width, hand length, total arm length, Somatotype – (Heath Carter method, 1990) and Selected Psychological parameters were State and trait anxiety, Achievement motivation and Competition anxiety.

The Z test was mostly used to test accurately the significance of difference between psychological and anthropometrical parameters of high and low performance handball players at the .05 level of significance.

The findings of the statistical analysis revealed significant differences between the following variables of high and low performance female handball players.

High performance female handball players had greater weight (7.83%), height (1.49%), sitting height (2.25%), femur bi-epicondylar diameter (6.95%), humerus bi-epicondylar diameter (1.75%), shoulder width (2.35%), upper arm length (3.86%), lower arm length (1.90%), total arm length (4.68%) wrist width (4.26%), hand length (2.21%), lower leg length (2.50%), upper leg length (3.03%), muscles girth (10.99%), total leg length (2.56%), biceps calf muscles girth (2.22%), mesomorphy (38.04%) and Achievement motivation (19.67%) than low performance female handball players.
Low performance female handball players had greater in skin folds (6.12%), endomorphic ratings (14.64%), Ectomorphic Ratings (12.48%), State trait anxiety (13.75%) and Competition Anxiety (15.26%) than high performance female handball players.

Whereas the no significance difference was found of hip breadth between high and low performance female handball players.