Chapter V

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

SUMMARY

Volleyball has become a very popular game throughout the world. It becomes the world’s second most popular sports and it is an international game that requires great skill and complex strategy. It can be adapted to any level of play and it is always fun. It is now recognized as one of the most breath taking and dramatic sport of the Olympics, both from the players and spectators view point. Volleyball, as one of the most amazing sports, includes fast movements, jumpings, landings and sudden shifts which need high power and strength for optimized performance (De almeida & Soarres, 2003). Volleyball is a sport played by two teams on a playing court divided by a net. The object of the game is to send the ball over the net in order to ground it on the opponent’s court, and to prevent the same effort by the opponent. A volleyball squad comprises 12 players with team positions broadly defined as setters, attackers, universal, middle blockers, and liberos. Each of these positions plays a specific role in a volleyball match (Gabbett and Georgieff, 2006). During the past few decades’ volleyball game has changed tremendously, not only in rule, techniques and concepts but also in the physical and anthropometrical measurements of the players. Therefore, the scholar decided to conduct the present study entitled as “An analytical study of anthropometric and physical parameters of volleyball players in different positions”.

The first objective of the study was to compare the anthropometric and physical parameters of volleyball players playing in different positions. To develop anthropometric and physical profile of national level male volleyball players positions wise (Attacker, Blocker, Universal, Setter and Libero) and to develop a logistic regression model to predict the likelihood of volleyball players according to different playing positions on the basis of selected anthropometric and physical variables.

A total of one hundred four male volleyball players were purposively selected for this study. Out of these, eighteen universal, sixteen libero, sixteen setters, twenty middle blocker, and thirty four attackers, within an age group of 19-33 years were

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selected from the top eight team of Senior National Volleyball Championship, 2013. The study was delimited to only international and national male volleyball players.

Anthropometric and physical variables were selected for the study namely Height (HT), Weight (WT), Arm Length (AL), Hand Length (HL), Palm Width (PW), Arm Girth Relax (AGR), Arm Girth Flexed (AGF), Fore Arm Circumference (FAC), Wrist Circumference (WC), Chest Circumference (CC), Thigh circumference (TC), Calf circumference (CF_C), Ankle Girth (AG), Leg Length (LL), Foot Length (FL), Speed, Shoulder Strength (SS), Standing Vertical Jump (SVJ), Agility (AGTY), Flexibility (FLEX), Abdominal Strength (ABS), and Body Composition (BODY_COMP).

Height was measured with the help of Stadiometer in centimeter. Weight was measured with the help of weighing machine in kg. Arm length, Hand length, Arm girth relaxed, Arm girth flexed, fore arm circumference, Wrist circumference, Chest circumference, Thigh circumference, Calf circumference, Ankle girth and Leg length were measured with the help of Gullick tape in Centimeter. Hand length, Palm width and Foot length were measured with the help of Sliding caliper in Centimeter. Speed was measured by 50 m Dash in seconds. Shoulder strength was measured by medicine ball throw in Meter. Explosive strength of legs was measured by Sargent jump test in Centimeter. Agility was measured by T-Shuttle Run Test in seconds. Flexibility was measured by Sit and reach in Centimeter. Abdominal Strength was measured by One Minute Sit-ups Test. Body composition was measured with the help of Skinfold caliper in mm. All the necessary data on different parameters were collected by the researcher scholar himself with the help of the experts.

Descriptive statistics were used to describe the nature and characteristic of data. For finding out significant difference in different parameters among the selected positions, one way ANOVA was applied and the level of significance was chosen as 0.05. For finding out the contribution of different parameters towards different playing positions, Logistic regression was applied.

The findings of the study showed significant difference among different position in height, weight, arm length, hand length, palm width, arm girth flexed, fore arm circumference, wrist circumference, calf circumference, ankle girth, leg length, foot length, speed, standing broad jump, shoulder strength, standing vertical jump, flexibility, abdominal strength, and body composition and found no significant difference in arm girth relaxed, chest circumference, thigh circumference and agility.
The first model developed for prediction of universal players showed that the likelihood of being good universal players can be significantly predicted by parameters namely body composition and fore arm circumference.

The second model developed for prediction of libero showed that the likelihood of being good libero can be significantly predicted by parameters namely hand length and speed.

The third model developed for prediction of setter showed that the likelihood of being good setter can be significantly predicted by parameters namely wrist circumference and speed.

The fourth model developed for prediction of blocker showed that the likelihood of being good blocker players can be significantly predicted by parameters namely height, arm length and speed.

The fifth model developed for prediction of attacker showed that the likelihood of being good attacker can be significantly predicted by parameters namely flexed arm girth, wrist circumference, speed, palm width, body composition, hand length, height, leg length and arm length.
CONCLUSIONS

On the basis of analysis of data and the results of the study following conclusions are drawn:

- From the above findings, it is concluded that anthropometric and physical characteristics have got a significant relationship with playing positions and these characteristics shall be kept in mind for selecting and preparing the volleyball players according to their playing positions.
- For the blockers in addition to the height, the length of the particular body parts such as limbs etc. are important. Along with the height, blockers also need to be speedy and explosive but generally it may be found that it is difficult to get the optimum combination of height, speed and strength qualities, although training can improve the relationship.
- Spikers (attackers) are those players who need the most varied combinations of selected anthropometric and physical characteristics namely, height, arm length, palm width, wrist circumference, leg length, speed, flexibility and body composition.
- Liberos are having unique characteristics as compared to other players in terms of anthropometric Libero did not show any particular characteristic but in terms of physical characteristics libero need to possess speed, agility, flexibility and body composition for which he should have.
- The logistic regression analyses showed that the likelihood of being positional players in volleyball players was significantly predicted by ten parameters namely Height, Arm length, Land length, Palm width, Fore arm circumference, Wrist circumference, Leg length, Speed, Flexibility and Body composition. Rest of the other parameters was statistically insignificant as per the Wald test.
On the basis of the findings of the study the following recommendations have been made.

- Similar studies may be conducted by selecting the Physiological and psychological variables.
- Similar studies can be done at the national/international level on female volleyball players.
- Psychological profiles can be prepared for the national and international level volleyball players.
- Similar study may be conducted on university volleyball players.
- Similar study may be conducted on different age groups.
- A similar study may be conducted on the players of different games and sports of different age and sex.
- Logistic regression models can be developed to predict the volleyball players according to their playing positions on the basis of physiological and psychological variables.