Chapter V

Summary, Conclusions

And Recommendations
Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

The overall performance and fitness of the players in sports activities largely depend on the important factors like the body size, proportions, physical and body compositions.

It is clear that, a successful sport engagement demands continuous training from an early age. Apart from training sessions, in order to succeed in contemporary sport it is essential for an athlete to possess certain genetically conditioned abilities and features. Body composition, anthropometric dimensions, morphological characteristics and physical abilities play a vital role in determining the success of an athlete.

Soccer is the most popular sport in Iran and is equally a much acclaimed sport worldwide. Soccer stands ahead in the list of professionally played sports and is widely accepted amongst people of all ages.

The famous researchers in sports anthropology especially in soccer, Reilly and Holmes (1983) stated that comprehensive physiological, psychological, and tactical qualities are needed to become a professional soccer player. Another prerequisite for young soccer players to progress is that they possess a certain level of technical skills. Currently, there is no generally accepted standard test to measure technical qualities, thus it is unclear what level of technical skills is required to be among the best adolescent players. The principal technical skills are shooting, passing, ball control, and dribbling.

Based on the opinion of sport scientists, technical sport performance, or sport-specific technical skills, is a central component in the development of young athletes in many sports, including soccer. A variety of tests has been developed to evaluate ball control with the body (trapping), head (heading) and feet (dribbling), passing (short and long), shooting accuracy, throwing and kicking for distance, agility and volleying, among others. The focus is often on the validity of the tests, changes in performance with age among youth players, comparisons of skills in youth and professional players classified by level of competition or expertise, and occasionally relationships between skill tests and outcomes of match-play.
The purpose of the study was firstly to find out relationship between the selected anthropometric and motor fitness variables with the soccer performance; and secondly to compare these variables among the players playing in different field positions and two age groups (i.e. 13-15, 16-17 years); and finally to estimate the contribution of selected anthropometric and motor fitness variables to the soccer performance among the adolescent elite boy players.

For this purpose, 240 adolescent elite boy soccer players were selected for the present study. Each of the early and late adolescent groups consisted of 120 participants who represented the eight upper premier league teams of Iran in the academic year 2011-12.

The following variables were selected for analysis of data.

Training age and age information to years through a background questionnaire were collected.

Anthropometric measurements include the body height, body mass, lengths of the leg and arm, girths of upper arm, forearm, thigh and calf, diameters of bi-acromial, bi-crystal, elbow and knee, and body composition.

Fat tissue (%) and lean body mass (%) were measured by body composition technique, through the seven component of skin folds include triceps, chest, abdomen, mid-axillary, supra-iliac, sub-scapular and thigh.

Motor fitness tests include the 50-yard dash, AAHPERD shuttle-run, AAHPERD sit-and-reach, vertical jump, Burpee and 1-mile run/walk.

Skill tests of soccer include the ball control with the body, ball control with the head, dribbling with a pass, dribbling speed, shooting accuracy and passing accuracy.

Coaches’ viewpoints about performance ability of the soccer players in a year.

Total performance points include the collection of coaches’ viewpoints about performance ability of the players (50%) and points of the six soccer skill tests (50%).

The variables were analyzed and examined to find out if any significant variations existed among the players playing in different position and between two stages of age group, and any significant relationships existed among the variables and finally for estimating the contributions of selected anthropometric and motor fitness variables to the soccer performance among the groups.
The collected data were subjected to statistical analysis. Pearson Correlation Coefficient was used for estimating the relationship between independent and dependent variables; the ANOVA for estimating of differences among the groups, if obtained F ratios were significant, least significant difference (Tukey) were used as post-hoc test to find out the differences between the paired means, and independent samples t-test was used for differences between two stages of age group, and regression analysis for estimating the contributions to the soccer performance.

5.2 CONCLUSIONS

With in the limitation of the study, the following conclusions were drawn:
1. The findings of the study allow appreciating the functional development of various contributions to the soccer performance.
2. There are specific anthropometric and motor fitness characteristics for the soccer performance among the adolescent elite boy players.
3. There are differential anthropometric and motor fitness variables for the soccer performance among the adolescent elite boy soccer players playing in different field positions.
4. There are differential anthropometric and motor fitness characteristics for the soccer performance among the adolescent elite boy soccer players in different age groups.
5. To the soccer performance, seven anthropometric variables were found as significant correlations which include the body weight, r=0.18; forearm girth, r=0.13; calf girth, r=0.25; bi-acromial diameter, r=0.15; bi-crystal diameter, r=0.12; knee diameter, r=-0.23; and lean body mass%, r=0.22.
6. All the motor fitness tests (i.e. 50-yard dash, shuttle-run, vertical jump, sit & reach, Burpee and 1-mile run/walk) were found as significant correlations to the soccer performance.
7. In the anthropometric variables, among the soccer players playing in different positions, the goalkeeper showed significantly larger than others in the body height, body weight, leg length, arm length, arm girth, forearm girth, thigh girth, calf girth, bi-crystal diameter, elbow diameter, knee diameter, fat mass % and lean body mass %, and only in the bi-acromial diameter was not found significant difference between them and the defenders but both of them were shown significantly larger than others. After the goalkeepers, the defenders were shown larger than others in the anthropometric measurements, but in the forearm girth and elbow diameter were
shown significantly larger than forwards only, and in the bi-acromial diameter were shown significantly larger than both of the forwards and midfielders.

8. In the motor fitness variables, among the soccer players playing in different positions, the goalkeepers were the best in the tests of sit & reach and vertical jump, but there were significant differences between them and the midfielders in the sit & reach test only. Moreover, the midfielders, in the Burpee and 1-mile run tests were the best among others, but there were significant differences in the Burpee test between them and forwards only, and in the 1-mile run test between them and both of the forwards and goalkeepers. The remaining differences were not shown significant.

9. In the soccer skill tests, among the players playing in different positions, in the passing accuracy test only, the forwards showed significantly better than both of the midfielders and goalkeepers but there were not significant differences between them and the defenders. And also the midfielders in the ball control, dribbling and performance ability were the best but there were not found significant differences between them and others.

10. Among the anthropometric variables, the high school soccer players showed significantly larger in the body weight, upper arm girth, calf girth, bi-crystal diameter and lean body mass % than the secondary school soccer players.

11. Among the motor fitness variables, the high school soccer players showed significantly better in the results of tests 50-yard dash, vertical jump, sit & reach, Burpee and 1-mile run/walk than the secondary school soccer players.

12. Among the soccer skill tests, the high school players showed significantly better in the tests of the ball control with the body, ball control with the head, dribbling with a pass, dribbling speed, passing accuracy, shooting accuracy and performance ability than the secondary school soccer players but in total performance points was not found significant differences.

13. For the total of adolescent elite boy soccer players, there are differential contributions of the anthropometric and motor fitness variables as the predictors in the soccer performance which were included with percentage of contribution, the 50-yard dash test 31.3%, endurance 43.8%,
bi-acromial diameter 46.5%, knee diameter 51.6%, lean body mass% 55.0% bi-crystal diameter 55.8% and calf girth 56.7% (P<0.05).

14. For the adolescent elite boy soccer players playing in different positions, differential contributions among the anthropometric and motor fitness variables as the predictors are followed below.

For the goalkeepers in respect of the percentage of the combined contribution respectively include the endurance (Burpee test) 61.6%, shuttle-run 78.7%, sit & reach 84.9%, 50-yard dash 89.9% and 1-mile run 91.5% (P<0.05); for the defenders include the 50-yard dash 38.0%, sit & reach 50.5%, endurance/Burpee test 60.7%, calf girth 65.0%, elbow diameter 71.2% and forearm girth 74.0% (P<0.05); for the midfielders include the 50-yard dash 29.2%, knee diameter 34.0%, lean body mass% 40.3% and endurance /Burpee test 43.9% (P<0.05). Moreover, for strikers include the body height 32.1%, endurance /Burpee test 51.9%, arm length 65.2%, shuttle-run 69.8% and bi-acromial diameter 73.4% (P<0.05).

15. For the secondary school elite boy soccer players among the anthropometric and motor fitness variables, the predictors with the percentage of the combined contribution include the endurance (Burpee test) 24.4%, sit & reach 32.4%, knee diameter 39.7%, bi-acromial 45.4%, 1-mile run 49.1%, if six variable enter to equation, Burpee test will be removed with contribution of 48.5%, elbow diameter 53.0%, lean body mass% 55.4, bi-crystal diameter 56.9% and if enter tenth variable, Burpee test again will be enter to equation 58.1% (P<0.05).

16. For the high school elite boy soccer players among the anthropometric and motor fitness variables, the predictors with the percentage of the combined contribution are included the 50-yard dash 44.6%, lean body mass% 51.7%, vertical jump 55.3%, Burpee test 57.0%, calf girth 59.7% and if be add up eighth component, lean body mass% will be as removed variable with contribution of 59.6% (P<0.05).

5.3 RECOMMENDATIONS

1. For talent identification of adolescent boy soccer players, the coaches can use the anthropometric and motor fitness data as a reference.
2. The coaches and trainers for training of adolescent boy soccer players can use the motor fitness results as a reference for identifying the weakness and strength conditions of their teams.

3. Based on the anthropometric differences among the adolescent boy soccer players playing in different positions, the coaches can arrange the players in the field positions according to the specific characteristics for each position.

4. Based on the motor fitness differences among the adolescent elite boy soccer players playing in different positions, the coaches are better placed to test and evaluate their players in each field position according to the recognized specific conditions for them.

5. For development of soccer performance in adolescent boy players, the coaches and trainers are better to focus on the identified anthropometric and motor fitness characteristics in this study, as their predictors.

6. For development of soccer performance in adolescent boy players playing in different field positions, the coaches and trainers are better focus on the specific anthropometric and motor fitness characteristics that were identified in this study, as their predictors.

7. To develop of soccer performance in adolescent boy players in different age groups, the coaches and trainers is better to focus on the differential anthropometric and motor fitness characteristics that were identified in this study for each of age group as their predictors.