Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to predict kho-kho performance from physical and physiological variables one hundred twenty kho-kho players from affiliated college of Delhi University, Delhi and Choudhary Charan Singh University, Merut. Who had participated in intercollegiate competition were selected as subjects for the study. The subject were in the age group of 18 to 25 years. The data were collected in physical that is motor components and physiological variables following appropriate testing procedure. The dependent variables was kho-kho performance. Which was determined by taking the average of 100 marks subjective grading by all the three expert. The physical variable including speed, agility (shuttle run), agility (squat thrust), endurance shoulder flexibility, trunk flexibility, dynamic balance, power (vertical jump), power (standing broad jump) and reaction time. Which were measured by test items. 50 mts. Dash, shuttle run, squat thrust, endurance, arm rotation test, sit and reach test, modified bass dynamic test, vertical jump, standing broad jump, and Nelson hand reaction test respectively.
Physiological variables included resting heart rate, systolic blood pressure, diastolic blood pressure, vital capacity, total fat percentage, respiratory rate and hemoglobin which were measured by heart beat per minutes, sphygmomanometer and stethoscope, wet spirometers, skinfold caliper. The total number of exhalations per minutes and hemomter respectively. Tester competency, subject reliability and reliability of tests were established by test, re-test method and reliability coefficients were found to be satisfactorily high.

The data were analyzed using the Pearson Product Moment (r) for assessing the relationship the kho-kho performance to each of the physical and physiological variables. Multiple correlation for assessing the combined of physical and physiological variables to kho-kho performance regression equation for predicting the kho-kho performance from physical and physiological variables level of significance for testing the null hypothesis was set at .05.

Analysis of data revealed significant relationship of kho-kho performance to each of the following physical and physiological variables - speed (r = -.583), endurance (r = .679), shoulder flexibility (r = .744), trunk flexibility (r = .609), dynamic balance (r = .513), power (vertical jump) (r = .636), power (standing broad jump) (r = .545), resting heart
rate \ (r = .638), systolic blood pressure \ (r = .768), vital capacity \ (r = .668), total fat percentage \ (r = -.411), respiratory rate \ (r = .768) and heamoglobin \ (r = .702). The relationship between agility (shuttle run and squat thrust), reaction time and diastolic blood pressure to kho-kho performance were not found statistically significant at .05 level of confidence.

Multiple correlation was computed to determined those physical and physiological variables which contributed most to kho-kho performance. The result of the study indicate the following findings - trunk flexibility \ (6), speed \ (1), power (standing broad jump) \ (8), dynamic balance \ (7), endurance \ (4), power (vertical jump) \ (9) and shoulder flexibility \ (5) contribute must to kho-kho performance \ (c) \ R_c .6187495 = .826 and fat percentage \ (5), resting heart rate \ (1), respiratory rate \ (6), heamoglobin \ (7) and vital capacity \ (4) contribute must to kho-kho performance \ (c) \ R_c .51674 = .869 among physiological variables.

Multiple Regression Analysis resulted in the following equations for physical \ (a) and physiological \ (b) variables.

(a) \ X_c = -26.045 \ (constant) + 1.366 \ (x_6) - 3.85 \ (x_1) + 5.614 \ (x_8) \\
- 0.013 \ (x_7) + 0.022 \ (x_4) + 0.097 \ (x_9) + 2.124 \ (x_5)
(b) \[ X_c = 27.453 \text{ (constant)} - 0.298 (x_5) - 0.705 (x_1) + 2.632 (x_6) \\
+ 1.963 (x_7) + 4.375 (x_4) \]

**Conclusions**

Within the limitation of the study the following conclusions may be drawn -

1. The physical variables namely - speed, endurance, shoulder flexibility, trunk flexibility, dynamic balance, power (vertical jump and standing broad jump) are significant related to kho-kho performance.

2. Among physiological variables namely resting heart rate, systolic blood pressure, vital capacity, fat percentage, respiratory rate and haemoglobin are significant related to kho-kho performance.

3. Agility (shuttle run and squat thrust) and reaction time among physical variable and diastolic blood pressure among physiological variables are not found to be significantly related to kho-kho performance.

4. The multiple linear regression equations developed in the study for independent physical variables which have shown significant relationship to kho-kho performance (speed, dynamic balance, shoulder flexibility, power (standing broad jump), endurance and
trunk flexibility can be effectively used for prediction of kho-kho performance.

5. The kho-kho performance can also be predicted using multiple linear equation developed in the study for independent physiological variables which have shown significant relationship to kho-kho performance (resting heart rate, respiratory rate, heamoglobin, vital capacity and fat percentage).

**Recommendations**

In the light of the findings of the present study the following recommendations can be made to the coaches and physical education teachers regarding selection of kho-kho players at appropriate time to start carrier systematically and scientifically. It is possible for the coaches and physical education teachers to accurately match the kho-kho players on the basis of selected physical and physiological variables instead of suggesting the kho-kho players by using trial and error method.

Following recommendations seems to be warranted for further studies.

1. The results of this study can be used by the physical education teachers and coaches as an aid in screening and selecting kho-kho players.
2. In the training programmes for kho-kho players emphasis must be laid on improvement of physical variables such as speed, dynamic balance, shoulder flexibility, power (standing broad jump), endurance and trunk flexibility.

3. Emphasis should also be laid on improvement of physiological variables such as resting heart rate, respiratory rate, heamoglobin, vital capacity and fat percentage.

4. It is recommended that the same study may be repeated by selecting subjects belonging to different age groups and levels of achievement other than those employed in the present study.

5. The study may be repeated with female kho-kho player of intercollegiate level.

6. A similar study may be carried out on male kho-kho player of interschool level.

7. A similar study may be carried out on female kho-kho player of interschool level.

8. A similar study may be repeated with male kho-kho player of national level.