Chapter Five

Summary, Conclusions and Recommendations
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SUMMARY

The purpose of this study was nutritional and kinanthropometrical survey of North and South Indian athletes. The sprinters (100m, 200m, 400m) of North and South Indian Universities participating in All-India Inter University Athletic Championship were selected as subjects. Total eighty five sprinters (North Indian athletes = 37 and South Indian athletes = 48) were taken as subjects. Their age ranged from 18 to 24 years. The nutritional components (carbohydrate, protein, fat, mineral, iron, calories) and kinanthropometrical measures (standing height, sitting height, weight, upper arm length, fore arm length, upper leg length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body composition, skin-fold measurements {biceps, triceps, sub-scapular, supra-iliac}, body density, lean body mass, fat weight, fat percentage) were selected for the present study. Modified nutritional status survey questionnaire (24 hour food intake recall method) was administered to the subjects. The data was collected by contacting eighty five athletes of North and South Indian Universities during All India Inter-university Athletic Meet held at Gwalior in January 2000. To collect the data, selected kinanthropometric measures, were taken on each subject individually during resting hours. The judgment of the performance of each subject was based on the rating scale according to the athlete’s achievement in the championship. Further, they were divided into two groups, first group represented the North Indian Universities and the second group represented the South Indian Universities. It was hypothesised
that there would be no significant difference in the nutritional status and
kinanthropometrical measures of North and South Indian athletes. It was also
hypothesised that there would be no significant relationship in the nutritional
status and kinanthropometrical measures of North and South Indian athletes.
Height, lengths, girths were measured with the help of measuring tape to the
nearest of half centimeter. Weight was taken with the help of weighing machine
to a quarter of a kilogram. The Lange's Skin-fold caliper was used to assess the
body fat. Measurement at four sites namely biceps, triceps, sub-scapular and
supra-iliac were measured in millimeter. To compare nutritional status and
kinanthropometrical measures of North and South Indian athletes. Event wise
(100m., 200m., 400m.) and selected variables wise (nutritional and
kinanthropometrical) comparison was made and to test the significant difference
't' test was employed. The relationship between dependent variable
(performance) and independent variable (nutritional components and
kinanthropometrical measures) was established by using Pearson's product
moment correlation. Most contributing nutritional components and
kinanthropometrical measures were selected through regression equation. For
testing the hypothesis the level of significance was set at 0.05 level.

**CONCLUSIONS**

Under the limitations of the study following conclusions were drawn:

1. In nutritional components, there is significant difference found in fat,
   mineral, iron and calories between North and South Indian athletes.
2. In kinanthropometrical measures i.e. sitting height, weight and lean body mass significant differences are found between North and South Indian athletes.

3. In nutritional variables, there is no significant difference in carbohydrate and protein of North and South Indian athletes.

4. In kinanthropometrical measures i.e. upper arm length, fore arm length, upper leg length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, fat weight and fat percentage, there is no significant difference found between North and South Indian athletes.

5. In nutritional components i.e. fat, minerals, iron, calorie, significant differences are found between North and South Indian 100m. athletes.

6. In kinanthropometrical measures there is significant differences found in weight and lean body mass between North and South Indian 100m. athletes.

7. In nutritional variables there is no significant difference in carbohydrate and protein of North and South Indian 100m. athletes.

8. In kinanthropometrical measures i.e. sitting height, standing height, upper arm length, fore arm length, upper leg length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, fat weight and fat percentage, there is no significant differences are found between North and South Indian athletes.
9. In nutritional components i.e. fat, minerals, iron and calorie, significant differences are found between North and South Indian 200m. athletes.

10. In nutritional variables there is no significant difference in carbohydrate and protein of North and South Indian 200m. athletes.

11. In kinanthropometrical measures no significant differences are found in any of the measures of North and South Indian 200m. athletes.

12. In nutritional variables, significant differences found in minerals and iron between North and South Indian 400m. athletes.

13. In nutritional variables there is no significant difference in carbohydrate and protein, fat and calorie of North and South Indian 400m. athletes.

14. In kinanthropometrical measures no significant differences are found in any of the measures of North and South Indian 400m. athletes.

15. In kinanthropometrical measures there is significant differences found in standing height, weight, upper leg length, lower leg length and lean body mass between finalist and rest athletes.

16. In nutritional variables, there is no significant difference in any of the variables between finalist and rest athletes.

17. In kinanthropometrical measures there is no significant difference found in sitting height, upper arm length, fore arm length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, fat weight and fat percentage between finalist and rest athletes.
18. In nutritional component, there is no significant relationship found in carbohydrate, fat, protein, minerals, iron and calorie with the performance of North Indian athletes.

19. In kinanthropometrical measures i.e. weight, upper arm length, upper arm girth, calf girth and lean body mass significant relationship is found with the performance of North Indian athletes.

20. In kinanthropometrical measures i.e. standing height, sitting height, fore arm length, upper leg length, lower leg length, foot length, fore arm girth, chest girth, waist girth, thigh girth, body density, fat weight and fat percentage, no significant relationship is found with the performance of North Indian athletes.

21. In nutritional components, there is no significant relationship found in carbohydrate, protein, fat, minerals, iron and calorie, with the performance of South Indian athletes.

22. In kinanthropometrical measures significant relationship is found in weight and lean body mass with the performance of South Indian athletes.

23. There is no significant relationship found in standing height, sitting height, upper arm length, fore arm length, upper leg length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, fat weight and fat percentage, with the performance of South Indian athletes.

24. In kinanthropometrical measures significant relationship is found in upper leg length with the performance of finalist.
25. In nutritional variables, there is no significant relationship found in carbohydrate, protein, fat, minerals, iron and calorie with the performance of finalist.

26. In kinanthropometrical measures there is no significant relationship found in standing height, sitting height, weight, upper arm length, fore arm length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, lean body mass, fat weight and fat percentage, with the performance of finalist.

27. In kinanthropometrical measures significant relationship is found in weight and lean body mass with the performance of all athletes.

28. In nutritional variables, there is no significant relationship found in carbohydrate, protein, fat, minerals, iron and calorie with the performance of all athletes.

29. In kinanthropometrical measures there is no significant relationship found in standing height, sitting height, upper arm length, fore arm length, upper leg length, lower leg length, foot length, upper arm girth, fore arm girth, chest girth, waist girth, thigh girth, calf girth, body density, fat weight and fat percentage, with the performance of all athletes.

**RECOMMENDATIONS**

1. It is recommended that the similar type of study can be undertaken for various other sub-components of nutrition.
2. It is recommended that the similar type of study can be taken for the other kinaesthetic variables.

3. It is further recommended that the similar type of study can be taken for the other track and field events.

4. It is further recommended that the similar type of study can be taken on other games players.

5. It is further recommended that the similar type of study can be conducted selecting other levels such as state, national.

6. The similar type of study can be conducted on female athletes.

7. Similar type of study can be conducted selecting physical and physiological variables.