

COMPARATIVE STUDY OF VITAL CAPACITY, BMI AND SELECTED ANTHROPOMETRIC MEASUREMENTS OF PHYSICAL EDUCATION STUDENTS BELONGING TO NORTH-EAST STATES AND ANDAMAN AND NICOBAR ISLANDS

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ABSTRACT

The purpose of this study was to determine the difference in selected variables of Vital Capacity, BMI and Anthropometric Measurements of North-East States and Andaman and Nicobar Islands Physical Education students. For the purpose of this study total 40 male Physical Education students were randomly selected, (20) from North-East States and (20) from Andaman and Nicobar Islands. The data pertaining to this study were collected on the selected subjects by using Dry Spiro meter for Vital Capacity, Weighting machine and Stadiometer for Body Weight and Height, Body Mass Index (BMI) was calculated from weight and height measurement and steel tape for Calf Girth and Biceps Girth. To determine significant difference between the North-East States and Andaman and Nicobar Islands Physical Education students in Vital Capacity, Body Mass Index (BMI), Calf Girth and Biceps Girth, independent t-ratio statistical technique was employed. Significant difference was observed in Calf Girth and Biceps Girth at 0.05 level and no significant difference were observed in Vital Capacity and Body Mass Index

Key wards: Vital Capacity, Body Mass Index, Calf Girth and Biceps Girth.

INTRODUCTION

Physical education is an educational process that has aim for the acquisition and refinement of motor skills, the development and maintenance of the fitness for optimal well-being, the attainment of knowledge, the growth of positive attitude towards the physical activity and sports. Vital capacity is the maximum amount of air, a person can expel from the lungs after a maximum inspiration. It is equal to the inspiratory reserve volume, tidal volume and the expiratory reserve volume. The vital capacity can help make a diagnosis of understanding lung disease. Anthropometry is the most common technique use to assess and degree of protein-energy malnutrition. Anthropometric measurements were central concerned of the first phase of the scientific era measurement focused on three areas, growth measures, body type and body composition. The measurement of body parameters to indicate nutritional status or can be used to measure Body mass index (BMI), is a measure of body fat based on height and weight that applies to adult men and women.

PURPOSE OF THE STUDY

The purpose of the [resent study was to compare the Vital Capacity, Body Mass Index and Selected Anthropometric Measurements of Physical Education Students' belonging to North-East States and Andaman and Nicobar Islands.

HYPOTHESIS

Based on the review of related literature, discussion with the experts, and research scholar's own experience it was hypothesized that there would be significant difference in Vital Capacity, Body Mass Index and Anthropometric Measurements of Physical Education Students belonging to North-East States and Andaman and Nicobar Islands.

DELIMITATION

- 1) The age of the subject was ranged from 18 to 25 years.
and all the subjects were chosen from Hanuman Vyayam Prasarak Mandal's Degree College of Physical Education, Amravati.
- 2) Only male students those who belonged to North-East states viz. Assam, Sikkim, Meghalaya and Manipur ,and Andaman and Nicobar Islands were4 chosen as the subjects.
- 3) The study was further delimited to Vital Capacity, Body Mass Index and Selected Anthropometric Measurements i.e. Calf Girth and Biceps Girth.

LIMITATIONS

- 1) No special motivational techniques was used to encourage or discourage the subjects while collecting the data.
- 2) Experience, training, background and malpractices or bad habits of the subjects were unknown to the scholar.
- 3) The heredity and dietary habits were also unknown to the selector.

SELECTION OF SUBJECTS

Purposive sampling method was adopted for the selection of subjects. Total 40 male students were selected in the study. Out of which 20 subjects were selected from North-East region and remaining 20 subjects from Andaman and Nicobar Islands.

COLLECTION OF DATA

The data were collected on the selected subjects by administering the appropriate test i.e.Dry Spirometer was for Vital Capacity, Portable Weighing for total body Weight, Stadiometer for height of the

body and Steel tape for Calf Girth and Biceps Girth. Before collection of data, the scholar explained the purpose of the study to the subjects, so as to they put their best.

ANALYSIS AND INTERPRETATION OF DATA

To know the status of the subjects in the selected variables descriptive statistic i.e. mean, standard deviation was computed and to determine the difference, if any, in between the selected groups mean difference method i.e. independent t-test was employed. The findings pertaining to the study have been shown in the following tables-

TABLE: 1

DESCRIPTION OF MEAN, STANDARD DEVIATION AND t-RAIO FOR THE DATA ON VITAL CAPACITY OF NORTH- EAST STATES AND ANDAMAN AND NICOBAR ISLANDS STUDENTS

Vital Capacity	Mean	Standard Deviation	Mean Difference	Standard Error of mean Difference	t- Ratio
North- East State	3810	623.9	300	174.68	1.71 [@]
Andaman & Nicobar Islands	3510	470.05			

[@] Not Significant at 0.05 Level

Tabulated t 0.05 (38) = 2.0168

Findings and Discussion

On the basis of findings of table 1, it is found that, there is no significant difference in Vital Capacity because the calculated t-value of 1.71 is less than the tabulated t-value of 2.0168 . The reason of insignificant difference in Vital Capacity may be attributed to the fact that the students selected for the present study were from professional course of Physical Education, those who had undergone the same types of difference sports and physical activities, the selected students of both the regions might have improved all those associated factors which are responsible to determine the Vital Capacity, therefore insignificant difference might have occurred in this study.

TABLE: 2

DESCRIPTION OF MEAN, STANDARD DEVIATION AND t-RATIO FOR THE DATA ON BODY MASS INDEX OF NORTH- EAST STATES AND ANDAMAN AND NICOBAR ISLANDS STUDENTS

BMI	Mean	Standard Deviation	Mean Difference	Standard Error of Mean Difference	t- Ratio
North- East State	23.02	3.10	1.11	0.94	1.18 [@]
Andaman & Nicobar Islands	24.13	2.88			

@ Not significant at 0.05 Level

Tabulated t.05 (38) = 2.0168

Findings and Discussion

Findings of table-2 showed that, there is no significant difference between the North-East and Andaman and Nicobar Islands students in Body Mass Index (BMI), as the calculated t-value of 1.18 is less than the tabulated t-value of 2.0168. The body mass index (BMI) was calculated from weight and height measurement, according to the findings weight and height ratio does not differ significantly. Hence, insignificant difference has been shown in this study.

TABLE : 3

DESCRIPTION OF MEAN, STANDARD DEVIATION AND t-RATIO FOR THE DATA ON CALF GIRTH OF NORTH-EAST STATES AND ANDAMAN AND NICOBAR ISLANDS STUDENTS

Calf Girth	Mean	Standard Deviation	Mean Difference	Standard Error of Mean Difference	t- Ratio
North- East State	35.25	2.36	2.7	1.13	2.38*
Andaman & Nicobar Islands	32.55	4.52			

*Significant at 0.05 Level

Tabulated t.05 (38) = 2.0168

Findings and Discussion

The findings of table-3, reveals that there is significant difference in calf girth between the North- East states and Andaman and Nicobar Islands students, as the calculated t- value of 2.38 is higher than the tabulated t- value of 2.0168 at 0.05 level, hence the difference of means is statistically significant.

The reason for significant difference may be because the North-East Students live in hilly area and to sustain their life, they need to fulfil the basic and secondary needs like to purchase any food particles, medicines, home appliances or to attend school or colleges people need to climb-up and down the hill to reach the nearest market or town generally that are situated in the plane area, therefore due to their such living styles calf and thigh muscles' hypertrophy occurs among them, hence such result might have shown in this present study.

TABLE : 4

DESCRIPTION OF MEAN, STANDARD DEVIATION AND t-RATIO FOR THE DATA ON BICEPS GIRTH OF NORTH- EAST AND ANDAMAN AND NICOBAR STUDENTS

Biceps Girth	Mean	Standard Difference	Mean Deviation	Standard Error of Mean Difference	t- Ratio
North- East State	30.09	3.45	3.23	1.30	2.48*
Andaman & Nicobar Islands	26.86	4.74			

*Significant at 0.05 Level

Tabulated $t_{.05 (38)} = 2.0168$

Findings and Discussion

The findings of table-4 reveals that, there is significant difference in Biceps girth between the students of North- East states and Andaman and Nicobar Islands , as the calculated t- value of 2.48 is higher than the tabulated t- value of 2.0168 at 0.05 level, hence the difference of means is statistically significant.

Therefore, it can be fairly inferred that North-East students Biceps girth are significantly greater circumference than the Andaman and Nicobar Islands students, it may be due their nature of living styles and active participation in games and sports activities. Hence such result might have occurred in this study.

CONCLUSION

On the basis of findings of statistical analysis and recognizing the limitations of the study, the following conclusions have been drawn-

- a) Significant difference was observed in Calf and Biceps girth between the students of North-East states and Adman and Nicobar Islands.
- b) Insignificant difference was observed in the variables of Vital Capacity and Body Mass Index between the students of North -East states and Nicobar Islands.

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