CHAPTER – V

SUMMARY, CONCLUSION AND RECOMMENDATION

The focus of this Chapter is Summery, Conclusion and recommendation.

5.1 Summary

In the summary the previous chapter, introduction, review of literature, methodology and discussion are included.

“Myraid manifestation of nature
Breads naturally seeds of variation” - Anonymous

Like other typologies Willam Sheldon’s (1940) focused on human variation of physique which is interactive sum of its parts, body structure, and body size and body composition. Information of body size and body type promote a comprehensive picture to build up ideal body composition which is necessary to an individual not only for health and fitness but for quality of life too that involves looking one’s best, feeling one’s best and performing to the best of one’s ability. In the totally fit body stamina, strength and flexibility have been brought to peak levels of development.

Such development is to be happened when a person possess substantial amount of motor ability, which is the present acquired and innate ability to perform motor skill of a general or fundamental nature, exclusive of highly specialized sports or gymnastic techniques.

For efficient and graceful movement, fundamental in nature, one must have proper back-up systems. Cardio-respiratory capacity acts as one of those back-up systems. Cardio respiratory capacity is the ability of the circulatory and respiratory systems to supply oxygen during sustained physical activity. Cardio respiratory capacity is responsible for cardio-respiratory fitness that also known as cardio vascular fitness, cardio vascular endurance, or aerobic fitness.
Amongst all variations, there is an underlying fundamental resemblance in human being. Every physique has its own sensory motor system and for the smooth execution of motor skill they are backed by the power generated by cardiovascular system though the capacity may differ from person to person. But synchronization of physique, motor ability and cardio respiratory capacity speak out – healthy code leading to a sound health and living.

The problem of the present study was concerned to the physique, motor ability and cardio respiratory capacity of male college student of our population. Accordingly the problem was stated as - "A Study on Physique, Motor Ability and Cardio Respiratory Capacity of the Young Adults”

**Purpose of the Study**

To assess the status of young adults of our population through their physique, motor ability and cardio respiratory capacity and inter-relationship among the three parameters.

**Significance of the Study**

This study might prove significant in many ways. Those are as following:

1. The study may throw new light on the aspect of physique, motor ability and cardio-respiratory capacity of young adults.

2. It may reveal the influence of body composition on motor ability and cardio-respiratory capacity.

3. It may help to reveal the relationship among body composition, motor ability and cardio respiratory capacity in the young adult age group.

4. The study may enlighten the physical educators, coaches and conscious guardians who might feel interested in development of the young ones in a healthy way.

5. This study may act as a frame of reference for formulating sport training programme and sport achievements in young adult age group.
Delimitation of the Study

This study was delimited to the following ways.

1. The study was confined only on males.

2. The age group of the subjects was 18-25 years as young adults.

3. The study was restricted to certain selected variables under the three major areas of the study, viz., Physique, Motor Ability and Cardio-Respiratory Capacity.

4. The subjects were selected from the three colleges where the students enrolled from three Districts of West Bengal viz., Nadia, Hooghly and North 24 Parganas.

Limitations of the Study

1. The researcher could no cover more areas of West Bengal because of paucity of time and money.

2. It was not possible from the part of researcher to conduct all the tests for all the subjects on the same day in the similar time and environmental condition.

3. The environmental conditions of different test days, more of less was the same, effect of environmental condition, if any were beyond the control of the researcher.

4. More sophisticated instrument and modern test could have given more accurate results on the variables of this study.

5. Other than the three parameters: physique, motor ability and cardio-respiratory capacity the socio-economic condition, psychological characteristics were not considered in this study.

6. In spite of creating a positive and conducive environment all the individual factors, like motivation, assertiveness etc, were beyond the control of the researcher.
Major Findings on Review of Related Literature

Singh (1978) studied on human physique and athletic performance. He conclude that physique should be considered in predicting individual potential for participating in physical activities of different type as body size and body type, physique influence on physical performance.

Body composition is the combination of relative amount of fat mass and fat free mass (bone, water, muscle, connective and organ tissues, teeth) (ISAK, 2008)

According to Gallahue and Ozmum (2006) motor fitness or motor ability is performance abilities of a person. The abilities depend on speed, agility, balance, co-ordination and power.

Mthews and Fox (1978) proclaimed the ability of the lungs and heart to take in and transport adequate amount of oxygen to the working muscles, allowing activities that involve large muscle masses to perform over long period of time.

Subjects of the Study

The subjects of this study were young adult college students. Their ages were ranging from 18 years to 24 years. Two hundred sixty five (265) male students were represented as the subjects from three different colleges, namely-

(i) KalyaniMahavidyalaya, Kalyani

(ii) Sudhir Ranjan Lahir Mahavidyalaya, Majhdia and

(iii) Chapra Bangaljhi Mahavidyalaya, Chapra.

These three colleges are located in different Sub-divisions of Nadia District of West Bengal, India. Out of 265 subjects 255 were completed all the tests of the study. Therefore, the statistical procedures were exercised on those 255 subjects.

Criterion Measure

The study was conducted on the three aspects of the study and those were: physique, motor ability and cardio respiratory capacity.
On the basis of the related literature and also available facilities the following variables were selected.

1. Personal data
   (i) Age (ii) Height and (iii) Weight

2. Physique
   I. Body Composition
      (i) Body Mass Index (BMI)
      (ii) Body Fat Percentage (%BF)
      (iii) Lean Body Mass (LBM) and
      (iv) Fat Mass (FM)
      (v) Waist-to-Hip Ratio (WHR)
   II. Somatotype
      (i) Endomorph
      (ii) Mesomorph and
      (iii) Ectomorph

3. Motor Ability
   (i) Agility (ii) Flexibility (iii) Speed (iv) Muscular Strength
   (v) Co-ordination (vi) Endurance (vii) Strength-endurance and
   (viii) Physical Fitness

4. Cardio respiratory capacity
   (a) Resting Heart Rate (RHR)
   (b) Exercise Heart Rate (HER)
   (c) Systolic Blood Pressure (SBP)
   (d) Diastolic Blood Pressure (DBP)
   (e) CR Ability (VO₂ max) and
   (f) Cardiac Index (CI)
Tools and Techniques used for data collection

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Variable</th>
<th>Method/Tool/Technique Used</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Data</strong></td>
<td>Age</td>
<td>Calculated from date of birth</td>
<td>year</td>
</tr>
<tr>
<td></td>
<td>Height</td>
<td>A centimeter marked vertical wall</td>
<td>cm</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>Standard Weighing Machine</td>
<td>kg</td>
</tr>
<tr>
<td><strong>PHYSIQUE</strong></td>
<td>Body composition</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>BMI</td>
<td>Weight/Height ratio</td>
<td>kg/m²</td>
</tr>
<tr>
<td></td>
<td>%BF</td>
<td>Skinfold method <em>(Durnin&amp;Womersley,1974)</em></td>
<td>-</td>
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<tr>
<td></td>
<td>FM</td>
<td>(Total body weight x %BF)</td>
<td>kg</td>
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<tr>
<td></td>
<td>LBM</td>
<td>(Body Mass- Fat Mass)</td>
<td>kg</td>
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<tr>
<td></td>
<td>WHR</td>
<td>Waist Circumference ÷ Hip Circumference</td>
<td>-</td>
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<tr>
<td></td>
<td>Somatotype <em>(Carter and Heath,1990)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Endomorph</td>
<td>Heath-Carter equation <em>(Carter,1992)</em></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Mesomorph</td>
<td>Heath-Carter equation <em>(Carter,1992)</em></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ectomorph</td>
<td>Heath-Carter equation <em>(Carter,1992)</em></td>
<td>-</td>
</tr>
<tr>
<td><strong>MOTOR ABILITY</strong></td>
<td>Flexibility</td>
<td>Sit-and-Reach Test <em>(Well &amp; Diillon,1952)</em></td>
<td>cm</td>
</tr>
<tr>
<td></td>
<td>Strength</td>
<td>Standing Broad Jump <em>(AAHPER,1976)</em></td>
<td>cm</td>
</tr>
<tr>
<td></td>
<td>MSE</td>
<td>1-min. Sit-up Test <em>(Pollock &amp; Wilmore,1978)</em></td>
<td>No./min</td>
</tr>
<tr>
<td></td>
<td>Coordination</td>
<td>Wall pass <em>(Scot Motor ability Test,1959)</em></td>
<td>No.in15s</td>
</tr>
<tr>
<td></td>
<td>Agility</td>
<td>4 x 10-yard shuttle run <em>(AAHPER,1976)</em></td>
<td>s</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>50-yard run <em>(AAHPER,1976)</em></td>
<td>s</td>
</tr>
<tr>
<td></td>
<td>Endurance</td>
<td>600-yard run <em>(AAHPER,1976)</em></td>
<td>s</td>
</tr>
<tr>
<td></td>
<td>PF</td>
<td>Sum of percentile score of Strength, MSE, Agility, Speed and Endurance</td>
<td>-</td>
</tr>
<tr>
<td><strong>CARDIO RESPIRATORY CAPACITY</strong></td>
<td>RHR</td>
<td>Heart rate monitor</td>
<td>bpm</td>
</tr>
<tr>
<td></td>
<td>SBP</td>
<td>Sphygmomanometer</td>
<td>mmHg</td>
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<tr>
<td></td>
<td>DBP</td>
<td>Sphygmomanometer</td>
<td>mmHg</td>
</tr>
<tr>
<td></td>
<td>HER(sub-max)</td>
<td>Queen’s College Step Test <em>(McArdle et al.,1972)</em></td>
<td>bpm</td>
</tr>
<tr>
<td></td>
<td>CR Ability</td>
<td>VO₂max (Sub-maximal)</td>
<td>ml/kg/min</td>
</tr>
<tr>
<td></td>
<td>Cardiac Index</td>
<td>Cardiac out-put/body surface area</td>
<td>L/min/m²</td>
</tr>
</tbody>
</table>

Statistics used for the study

After collection of the data, their interpretation were made through mean, standard deviation, t-test, ANOVA and post-hoc LSD test using SPPSS 20 version.

In chapter –IV results and discussion have been made according to criterion measure and findings.
5.2 Conclusions

On the basis of results obtained the conclusions of the study are drawn within the limitations of the present research work.

1) The average height of the subject of the study was slightly higher than the average height (164.6 cm) adult male of West Bengal.

2) The young group their weight had the normal range according to their height. Weight is correlated with body type and body composition.

3) BMI of the population was within normal range and BMI was correlated with weight and systolic pressure.

4) % BF was correlated with somatotype and other body composition variables: fat mass, lean body mass, waist-to-ratio.

5) Waist to hip ratio was correlated with the BMI and somatotype.

6) Majority of the subjects were in mesomorphic-ectomorph. Their somatotype was correlated with other physique variable

7) Significant difference observed among the three groups of endomorph, mesomorph and ectomorph in respect of body composition variables.

8) Agility of the subjects was negatively correlated with their height, weight and lean body mass.

9) Endurance of the subject was negatively correlated with their BMI, resting heart rate, exercise heart rate and positively correlated with VO₂ max.

10) Systolic blood pressure was an important variable in regard to body composition variables; because SBP of the subjects was significantly related and with their height, weight, BMI, Fat mass, lean body mass and waist-hip ratio

11) Body composition variables had no relation with heart rates and VO₂ max.

12) Resting heart rate of the subject was negatively related to their endurance capacity of the subjects.
5.3 Recommendation

An interested researcher has the opportunity to conduct further study on the basis of the finding of the present study in the following area.

1. The same problem may be conducted on the female counterparts.

2. The same study may also be conducted on various age groups on males and females.

3. Related study on young adults can be conducted on a larger sample size.

4. In the present study any psychological parameters were not considered. Different types of variables on psychological parameters with sociological perspectives may be considered for this study.

5. The same type of study may be conducted on the basis of socio-economic condition of the represents.

6. The similar type of study may be conducted on different demographic and professional groups.

7. The results of the study can be used by the physical education teachers and trainers to develop and maintain their training programme for upliftment their groups in performance.

8. Similar study may be conducted using more sophisticated tools.