Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Obesity is a common, powerful and one of the common factor leading to High Blood Pressure. The growing evidence shows that being overweight has more chances for development of health problems, such as heart disease, stroke, diabetes, certain types of cancer, gout (joint pain caused by excess uric acid), and gall bladder disease. Lifestyle influences, such as improper diet and lack of exercise, are main contributing factors for developing obesity.

Obesity and hypertension are both major public health problems in the modernized society. Many studies have shown that high blood pressure and overweight are both independent risk factors for cardiovascular disease. Hypertension is one of the most common obesity-related complications and most of hypertensive individuals are obese.

The prevalence of hypertension associated with obesity varies with age, race, and sex. Also, studies have shown that obesity increases
the risk of developing hypertension. Weight gain in adult life especially seems to be an important risk factor for the development of hypertension.

A central fat distribution is a better predictor for hypertension than overall fat mass. Waist Hip Ratio and Blood Pressure levels are interrelated and have good correlation.

Therefore the present study was conducted to find out whether Blood Pressure has any relationship with Obesity. The purpose of this research was to study Body Composition, Body Surface Area and Waist-Hip Ratio among varying levels of Blood Pressure Group.

The study was conducted by examining 670 male subjects aged 45 to 55 year from the four major cities of Gujarat State i.e. Ahmedabad, Rajkot, Vadodara and Surat comprising of High Blood Pressure (331), Normal Blood Pressure (312) and Low Blood Pressure (27). In order to draw an adequate representative samples incidental sampling technique was employed. To ascertain the level of Blood Pressure of the respondent help was taken from the medical doctors. Blood Pressure of each subjects selected for the study was measured by doctors itself.

For the collection of data research scholar had personally visited 16 hospitals in four cities of Gujarat. Researcher had visited to OPD (Out Patient Department) of various hospitals on different days
according to feasibility of the hospital administration and the feasibility of the researcher between 10 am to 2 pm during the day. To collect the data in each hospital minimum of seven days to fifteen days were spent in the hospital depending upon the availability of the subjects.

In order to ascertain significant difference between among varying levels of Blood Pressure Group in Body Composition, Body Surface Area, Waist-Hip Ratio One Way Analysis of Variance (ANOVA) was employed. The entire analysis of the data was done with respect to the objectives of the study. For further analysis Post-Hoc Test (Scheffe’s Test) was applied. Hypotheses were tested at .05 level of significance.

The mean scores of Body Composition of the male subjects of age 45 to 55 of High, Normal and Low Blood Pressure group were found to be 29.549, 23.652 and 25.944 respectively. The Sum of Squares was 5599.281 and 24728.799 for between groups and with in the groups respectively and Mean Sum of Squares was 2799.640 and 28.680 for between groups and with in the groups respectively. The obtained ‘F’ was 97.617, which was significant at 0.05 level and 0.01 levels (tabulated value of ‘F’ at 0.05 level of significance was 3.00 and at 0.01 was 4.62). The obtained ‘F’ was more than the tabulated ‘F’ so the null hypothesis was rejected; there was significant difference in Body Composition among varying levels of Blood Pressure group.
Further Post-Hoc test was applied using Scheffe’s test. It was found that Body Composition of Normal Blood Pressure group was significantly better in comparison with the High Blood Pressure group and Low Blood Pressure group.

The mean scores of Body Surface Area of the male subjects of age 45 to 55 of High, Normal and Low Blood Pressure group were found to be 1.859, 1.798 and 1.821 respectively. The Sum of Squares was 0.583 and 19.669 for between groups and with in the groups respectively and Mean Sum of Squares was 0.291 and 0.029 for between groups and with in the groups respectively. The obtained ‘F’ was 9.880, which was significant at 0.05 level and 0.01 levels (tabulated value of ‘F’ at 0.05 level of significance was 3.00 and at 0.01 was 4.62). The obtained ‘F’ was more than the tabulated ‘F’ so the null hypothesis was rejected; there was significant difference in Body Composition among varying levels of Blood Pressure group. Further Post-Hoc test was applied using Scheffe’s test. It was found that more number of subjects were found under Average Body Surface Area in Normal Blood Pressure group compared with the High Blood Pressure group and Low Blood Pressure group.

The mean scores of Waist Hip Ratio of the male subjects of age 45 to 55 of High, Normal and Low Blood Pressure group were found to be 0.941, 0.924 and 0.904 respectively. The Sum of Squares was
0.067 and 1.140 for between groups and with in the groups respectively and Mean Sum of Squares was 0.034 and 0.002 for between groups and with in the groups respectively. The obtained ‘F’ was 19.737, which was significant at 0.05 level and 0.01 levels (tabulated value of ‘F’ at 0.05 level of significance was 3.00 and at 0.01 was 4.62). The obtained ‘F’ was more than the tabulated ‘F’ so the null hypothesis was rejected; there was significant difference in Body Composition among varying levels of Blood Pressure group. Further Post-Hock test was applied using Scheffe’s test. It was found that more number of subjects were found under High Risk in Waist Hip Ratio of Normal Blood Pressure group and in High Blood Pressure group most of the subjects were under Very High Risk.

**Conclusions**

On the basis of the findings of the present study the following conclusions were drawn:

1. The results were in agreement with the association between Body Composition, Body Surface Area and Waist Hip Ratio with Blood Pressure level.

2. Obesity and gaining more weight could be identified as one of the important components for increase in Blood Pressure. Therefore, necessary care must be taken by individuals to
maintain weight and Fat in order to maintain the Normal Blood Pressure.

3. Healthy body composition is essential for optimizing health and minimizing the risk of many of the most prevalent chronic conditions and diseases seen in our society today.

4. Since obesity is the determinant of hypertension, weight control could be the most effective way to prevent hypertension in a population and to reduce Blood Pressure among overweight hypertensive subjects.

5. All should participate in daily fitness program whether having hypertension or not to enhance his fitness level. If hypertension patients participate in fitness program they must consult doctor and participate in physical fitness program under supervision of fitness consultant or expert. Also those who are not having hypertension should do physical exercise to maintain weight which helps directly to reduce health risks.

6. The most important point is that when it comes to preventing heart disease, one has to start with the kids. So physical education teachers should increase children’s cardiovascular health by laying emphasis on physical activities like moving, jumping rope, performing relays, or dancing because if children
are healthy in the young age then it will help them to live better life when they grow old.

**Recommendations**

On the basis of the findings of the present study, the following recommendations are made:

1. Several research studies can be carried out to determine the impact of Obesity on Blood Pressure in various states.

2. A comparative study can be carried out on Body Composition, Body Surface Area and Waist Hip Ratio among the Male and Female of varying levels of Blood Pressure groups.

3. Similar study may be carried out on subjects with age level and sex other than used in this study.

4. A study can be conducted to assess the Body Composition, Body Surface Area and Waist Hip Ratio of school children and college youth.

5. A Study can be conducted to see the effect of obesity on IQ of school and college students.

6. Similar study can also be done to determine the impact of obesity on diabetes.