MAIN FINDINGS OF THE STUDY:-

1. Background information of respondents
2. Weight reduction methods adopted by respondents
3. Pre and Post Dietary information of respondents
4. Pre and Post Anthropometric Measurement information of respondents
5. Pre and Post Body composition analysis information of respondents
SUMMARY AND CONCLUSION

Overweight is fast becoming a public health problem not only in developed countries but also in developing countries. Along with conventional methods of weight reduction other upcoming centres for weight reduction are subject to worldwide speculation. The present study investigated assessment of weight reduction in overweight adult people with a combination treatment of electronic devices, diet and physical exercise. The study was conducted within the municipal limits of Udaipur City, Rajasthan. One of the weight reduction canters, perfect point care Ltd. was selected for the purpose of study. All available subjects attending a commercial weight reduction clinic were selected. The sample comprised one hundred eighty adult (180) peoples (90 male and 90 female) in the age group of 30-40 year. Objectives of study, we aimed to assess the nutritional status of overweight adult people, to develop nutrition and complete lifestyle modification package for overweight adult people and to find out the gender difference in the effectiveness of nutrition and complete lifestyle modification package on overweight adult people and to examine the effectiveness of combined nutrition and complete lifestyle modification package (NCLMP) for overweight adult people. In NCLMP we combined electronic Devices, diet and physical exercise programs with at least 12 months of follow-up, conducted in overweight and obese adults (body mass index ≥25).

For the assessment of overweight and nutritional status of adult people, an interview schedule was developed to collect the information about respondent's age, religion, caste, type and size of family, education, family occupation, marital status. Basic anthropometric measurements such as height, waist and hip circumference measurements were taken using standard methods given by Jelliffe (1966). The derived anthropometric measurements viz. body mass index and waist and hip ratio were calculated. Weight and Body composition of the subjects was determined using bioelectrical impedance using Body composition analyzer. In body composition parameters viz. fat mass, muscle mass, bone mass, lean body mass, total body water and visceral fat rating were determined.
In intervention phase subject were divided into 2 group male (90) and Female (90). On the basis of energy requirement of the subject for weight loss diet plan was prepared for one week and then given to the subject. Furthermore individual Counselling was also given to the subject so solve their queries. During intervention phase anthropometry measurement (WT, BMI, WHR) were recorded weekly. Along this electronic muscle exerciser is used to exercise the muscle by passing an impulse through the muscle, which stimulates the muscle (motor nerves control muscle activity). For active exercise walk and yoga methods was used. Walking is the simplest and most effective from of activity for fitness and health way or living. Yoga has been practiced for thousands of year in the east and embodied many different system.

In post intervention phase All the nutritional, biochemical and atheropgenic factors, that were assured prior to the intervention period were assessed again and recorded in the – "Nutrition and complete lifestyle modification package", used in the pre experiment phase, after 3 months. Data collected was statistically analyzed.

Main findings of the study are as follows:-

1. General information of the subjects reveals that majority of the participants (73.3 per cent) were in the younger strata i.e. 30-35 years followed by those (23.6 per cent) who were above 36 but less than 40 years of age. Information on religion of the participants depicted that 86.6 respondents i.e. cent per cent were Hindu, 8.88% were Muslim and 4.44% were other by religion. Information about caste depicted that majority of subjects 80.5% were belong to general caste, 14.4% were OBC and 5% were belong to SC.

2. Data on the type of family have shown that 19.4% of the subjects were from joint family and remaining 80.5% of the respondents belongs to nuclear family. When subjects were enquired about the food habits, it was found that majority of the respondents (72.7 per cent) were vegetarians, 18.33% were non-vegetarians and remaining 8.8 per cent subjects reported themselves as ovo-vegetarians.
3. Figures on profession illustrates that (12.2 per cent) of female respondents were housewives and 55 per cent were engaged in service and 9 per cent were engaged in business. Rest of the 4 per cent subjects were students. It was found that majority of the 55% male respondents were in service, 9% in business and only 3% subjects were students. Marital status of the subjects has also concise in the table 4.1 which indicate that 87.7% of the subjects were married, 10.5% were single and only 3 female subjects were widow.

4. The mean weight and BMI of the male subjects were 85.6±9.6 kg and 28.3±1.9 kg/m² and female subjects were 73.82±1.1 kg and 28.06±1.9 kg/m² respectively before starting the intervention. The impact of diet was assessed every week and was statistically analyzed. Declining trend of observations clearly suggests a positive role of diet on weight and BMI.

5. Results revealed the grades of obesity in male and female subjects after treatment. It was observed that the number of male subjects with normal BMI increased 38.8% and female subjects with normal BMI increased to 42.2% nas compared to 3.3% before treatment. Similarly subjects in Grade 1 were 37.7% as compared to 66.1% before treatment. On the other hand percent of subjects suffering from Grade 11 obesity fell from 27.7% to 16.6% after treatment, also in Grade 111 from 3.8% to 5.5%.

6. The changes in waist and hip circumference of male subjects with normal waist hip ratio increased to 61.1% as compared to 5.5% before treatment and with high risk decreased to 24.4% as compared to 94.4% before treatment. Similarly female subjects with normal waist hip ratio increased to 64.4% as compared to 44.4% before treatment and with high risk decreased to 50% as compared to 55.5% before treatment.

7. Results revealed that the fat free mass of the male subjects increased from 39.9±1.1 at pre intervention to 41.1±1.0 kg and female subjects increased from 37.9±1.1 at pre intervention to 39.1±1.1 at the end of the
study. Thus, in the present investigation, there was an increase in the fat free mass with the subsequent decline in the body fat, as a beneficial impact of electronic muscles exercise and nutritional balanced weight loss diet.

8. Results of fat mass of the male subjects decreased from 24.5±1.5 at pre intervention to 21.5 ±1.4 kg and fat mass of the female subjects decreased from 27.4±1.5 at pre intervention to 24.5±1.4kg.

9. Results of TBW of the subjects calculated before and after the intervention showed slightly higher value in both subjects 31.2±0.6 kg were found at the end of the intervention.

10. Results of gender wise Comparative effect of diets on body composition its shows that the average reduction in fat percent was significantly greater in the Male group than Female group. With regard to fat loss, also there was a trend towards greater loss of fat mass in the Male group than Female. Table also exhibits that the Male and female group obtained same increments in fat free mass (+ 1.2 per cent) and total body water (+ 0.3 per cent) but the significance difference between the groups was observed in fat mass, body fat percent and fat free mass.

On the basis of above results, it can be concluded that nutritional status of adult population of Udaipur, Rajasthan is being affected by various factors like family size and type, educational status, income, physical activity, dietary intake, food habits and life style patterns. Body composition is also an indicator of malnutrition i.e. either under or over nutrition prevalent among population by indicating body fatness. Diseased population are overweight and obese and at risk of malnutrition on the basis of BMI. BMI is a good indicator of nutritional status but it can not be used to measure fat distribution in the body which is mainly deposited in various parts of the body and also insensitive to changes in fat mass, which is a more accurate indicator of change in nutritional status. Body composition assessed by skinfold measurements predicts subcutaneous fat mass of specific sites only, not the whole body fat mass while waist hip measurements
tells about the abdominal obesity. Hence there was need to assess body composition to find out the fat deposition in internal body i.e. visceral fat of normal and diseased population. BCA is safe and non invasive technique to measure body composition, in particular, whole body fat mass with the use of whole body impedance. It has been used mainly in field and laboratory settings and has been validated for use in assessing body composition of normal as well as diseased adults. It can be thus concluded that weight loss can be brought about by exercise and diet. For sustained weight loss along with exercise and diet behaviour modification is required.