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3	Home Sc.	NMOM CC5- Therapeutic Nutrition	Obesity	PDF	Dr.Punam Kumari	PG Dept. of Home Science, MMC,PU,Patna

MA – H. Sc. Sem II

Therapeutic nutrition → CC5

Unit-1 : Obesity and its Management

Introduction: Obesity is the most common nutritional disorder in present day. It is a state in which an excess of fat accumulates. Obesity is a condition of the body in which there is an excessive deposit of fat that may have an adverse effect on health leading to reduced life expectancy and increased health problems. Obesity is measured by Body Mass Index (BMI). BMI is calculated by a person's weight (in kg) divided by the square of her or his height (in metre). People are generally considered obese when their body mass index (BMI) is over 30 kg/m²; and the range 25–30 kg/m² is called overweight.

Prevalence of obesity:

About 30% of people in the world are obese or overweight. Obesity in India has reached epidemic proportions in the 21st Century with morbid obesity affecting 5% of the country's population. In India more than 135 million people are affected by adult obesity. Childhood obesity is now an epidemic in India with 14.4 million obese children. India is the second highest number of obese children in the world next to China. Acc. to the recent stats stated by Indian journal of Endocrinology and Metabolism 27million Indian children will be obese by 2030.

Types of obesity:

- 1. High risk obesity:** It is also known as central obesity or pear type obesity. Excess fat deposited around abdomen, waist and flanks.
- 2. Low risk obesity:** known as gynoid obesity or pear type obesity-Excess fat deposited in the thighs, breast and buttocks.

According to WHO:

BMI < 25 → Normal

BMI 25-29.9 → Overweight

BMI 30 -29.9 → Class I Obesity

BMI 35-39.9 → Class II Obesity

BMI > 40 → Class III Obesity (Extreme)

For Asian:

BMI < 23-----Normal

BMI 23-29-----class I Obesity

BMI > 30-----Class II Obesity

Etiology of obesity:

Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity, and genetic susceptibility. A few cases are caused primarily by genes, endocrine disorders, mental disorder etc. Many factors contribute to the development of obesity. Some of these are discussed below:

Diet: The fundamental cause of obesity and over weight is an energy imbalance between calories consumed on one hand, and calories expended on the other hand. The high intake of saturated fats, carbohydrate rich foods, high consumption of soft drinks, sugars etc. are associated with weight gain or obesity.

Physical activity: A sedentary lifestyle plays a significant role in obesity. Increasing use of mechanized transportation, greater prevalence of labour - saving technology in the home and more passive leisure period are contributing factors. It is also found that increased media exposure and time spent on watching television is associated with the risk of obesity.

Economic status: Obesity is more common among the higher income groups as they consume excess food and do less physical works than the low income groups.

Age and sex: Obesity can occur at any age in either sex. The incidence is higher in persons who lead sedentary lives .Hormonal predisposition put women at higher risk of obesity when compare to men.

Heredity: Genes also play important roles in determining a person's susceptibility to weight gain.

Behaviour: Complex behaviour and psychological factors also cause over eating and may be one of the reasons for increasing body weight.

Social changes: Worldwide societal changes and nutrition transitions are driving the obesity epidemic. Economic growth, modernization, urbanization and globalizations of food markets are the main forces for the obesity.

Endocrine factors: Endocrine may be a factor in obesity .It is found in the most of the patients suffering from hypothyroidism, hypogonadism. Obesity is common at puberty, pregnancy and menopause.

Health problems associated with obesity:

- Physical disability
- Cardiovascular Diseases
- Diabetes mellitus syndrome
- Obstructive sleep apnoea
- Cancer-uterus, colon, breast prostate
- Osteoarthritis
- Asthma.
- Gout

- Depression
- Hypertension
- Metabolic disorder
- Low life expectancy

Diagnosis of obesity:

- + Body weight
- + Body Mass Index
- + Waist circumference
- + Waist Hip Ratio (WHR)
- + Skin –fold measurement

Body weight: An adult weighing 10 per cent more than the standard weight is overweight and 20 per cent more is obese.

Body Mass Index: BMI is calculated as weight in kg/height in m²

Waist circumference: Pathological margin is 40 inches in males and 35 in female. It is a clinical tool to evaluate abdominal fat before and during weight loss treatment.

Waist Hip Ratio: .90 for males and .80 for females.

Skin-fold measurement: Biceps, triceps, thigh, calf skinfolds is measured by using Lange's skin fold callipers.

Treatments:

1. Diet therapy
2. Exercise
3. Behavioural modification
4. Weight loss surgery

1. Diet therapy:

Calorie: A very low calorie diet is recommended (900-1200 kcal / day). Calorie restricted diet is the safest and most effective but reduction should be gradual and stepwise. The initial goal of weight reduce is to reduce body weight around 10 per cent from baseline. 10 per cent weight reduction in six months is ideal.

Protein: 1gm protein /kg body weight is prescribed for tissue repair and cell formation.

Carbohydrates: Low carbohydrate diet is recommended for weight control. Foods containing a higher percentage of protein and fats e.g. Meat, poultry, fish, eggs, cheese, nuts, seeds are often allowed.

Fat: Low fat diet should be given to reduce the energy value of food. Fat rich diet like nuts and oils should be restricted. Skim milk should be the choice.

Vitamins: A multivitamin is recommended daily for proper health.

Minerals: Restriction of salt is helpful to reduce the weight.

Calcium may depress certain hormones which consequently improves the body's ability to breakdown fat in cells and slow fat production.

Fluid: Drinking eight glasses of water per day is a requirement. Also a glass of water before meals helps to cut down food intake.

High fibre: higher intake of fibre automatically cut down fat and calories. To reduce weight, taking high fibre is considered less expensive and less torturous than medical treatment.

2. Exercise:

Intensity and duration of exercise, 6km/hr, is ideal. Isotonic and isometric exercise is recommended. Walking, running and cycling are the most effective means of exercise to reduce body fat.

3. Behavioural modification:

- High calorie foods like cold drinks, French fries, chips, pastries etc not be kept in the house.
- Fixed dining time and dining space should be followed.
- T.V. viewing should be restricted for children and adolescents.
- Avoid eating during T.V. viewing.
- Exercise and fitness culture should be started from early childhood.
- Sedentary habits should be discouraged.
- Stairs preferred to lifts.
- Increase consumption of fruits and vegetables, as well as legumes, whole grains and nuts.
- Limit the intake of sugar.

4. Surgery:

Surgery and drug treatment is the last weapon for the resistant obesity.

One day Menu plan for obesity:

Morning: tea -1cup

Breakfast: Dalia/Bread/Cornflakes

Lunch: Salad/Soups—1 bowl, chapatis-2, dal-1 cup, veg.-1cup, curd- 1 cup

Evening tea: poha/upma/roasted Chana/sprouted salad

Dinner: soup-1 bowl, chapatis-2, vegetable-1 cup, dal 1 cup.

..... **The end**.....