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OBESITY: A LEADING RISK TO HUMAN HEALTH

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ABSTRACT

INTRODUCTION

Obesity is now so common within the world's population that it is beginning to replace undernutrition and infectious diseases as the most significant contributor to ill health. In particular, obesity is associated with diabetes mellitus, coronary heart disease, certain forms of cancer, and sleep-breathing disorders. And in future it can lead to global threat to human

METHOD

This paper aims to give knowledge about various causes, diagnosis, associated health risks, treatment and prevention of obesity. A survey was conducted through a google form link shared on various social media. The population who agreed to participate in the study were included by a simple random method. Populations aged 16 years or more were included in the survey.

RESULT

86.8% of people thinks that obese people are more lazier.

89.9% of people think that obesity leads to anxiety and depression.

89.3% of people think that obesity can be genetic.

CONCLUSION

Overweight , obesity and their impacts in different dimensions of health must be considered as one of the most important public health priorities. There is a need for comprehensive strategies for prevention and control of obesity. The prevention and reduction of overweight and obesity depend ultimately on individual lifestyle changes and habits of diet.

KEY WORDS

Global threat, obesity, Diabetes Mellitus, Lifestyle changes, Diet, Coronary heart diseases



INTRODUCTION:

Obesity can be described as the "New World Syndrome". Its prevalence is on continuous rise in all age groups of many of the developed countries in the world. Statistical data reveals that the problem of obesity has increased from 12–20% in men and from 16–25% in women over the last ten years. Obesity, in simple terms, may be defined as a state of imbalance between calories ingested versus calories expended which would lead to excessive or abnormal fat accumulation. Obese patients have been associated with increased risk of morbidity and mortality relative to those with ideal body weight. Even modest weight reduction in the range of 5–10% of the initial body weight is associated with significant improvements in a wide range of co-morbid conditions.

METHOD:

This paper aims to give knowledge about various causes, diagnosis, associated health risks, treatment and prevention of obesity. A survey was conducted through a google form link shared on various social media. The population who agreed to participate in the study were included by a simple random method. Populations aged 16 years or more were included in the survey.

STUDY TOOLS:

The online questionnaire consists of socio- demographic characteristics including name, age, gender, occupation and name of country.

On receiving and clicking the link the participants will be directed to the page of information about the study and informed consent. After they agreed to participate in the survey they would have to fill up their details and then the set of several questions will appear consecutively which is to be answered.

This study was conducted among 161 people in the world and responses came from INDIA, USA, CANADA, LONDON, KENYA AND AUSTRALIA.

Out of 161 participants 91 were female and 70 were male.

WHAT IS BMI?

The body mass index (BMI) is now the measurement of choice for many Physicians and researchers studying obesity. The BMI uses a mathematical formula that accounts for both a person's weight and height. BMI is a useful general guideline and it is a good estimator of body fat for most adults 19-70 years of age. However it may not be an accurate measurement of body fat for bodybuilders, certain athletes and pregnant women.

$$\text{BMI} = \frac{\text{Weight of an individual (in kg)}}{\text{Height}^2 (\text{m}^2)}$$

BMI CALCULATOR www.ijcrt.org	
BMI CATEGORY	CLASSIFICATION
Below 18.5	Underweight
18.5-24.9	Normal weight
25.0-29.9	Pre-obesity
30.0-34.9	Obesity class I
35.0-39.9	Obesity class II
Above 40	Obesity class III

MEASURING BODY FAT

The following methods require special equipment, trained personnel, can be costly, and some are only available in certain research facilities.

1) Underwater weighing (hydrostatic weighing). This method weighs a person underwater and then calculates lean body mass (muscle) and body fat. This method is one of the most accurate ones; however, the equipment is costly.

2) BOD POD: The BOD POD is a computerized, egg-shaped chamber. Using the same whole-body measurement principle as hydrostatic weighing, the BOD POD measures a subject's mass and volume, from which their whole-body density is determined. Using this data, body fat and lean muscle mass can then be calculated.

3) DEXA: Dual-energy X-ray absorptiometry (DEXA) measures bone density. It uses X-rays to determine not only the percentage of body fat but also where and how much fat is located in the body.

The following two methods are simple and straightforward:

Skin calipers: This method measures the skinfold thickness of the layer of fat just under the skin in several parts of the body with calipers (a metal tool similar to forceps); the results are then used to calculate the percentage of body fat.

Bioelectric impedance analysis (BIA): There are two methods of the BIA. One involves standing on a special scale with footpads. A harmless amount of electrical current is sent through the body, and then percentage of body fat is calculated. The other type of BIA involves electrodes that are typically placed on a wrist and an ankle and on the back of the right hand and on the top of the foot. The change in voltage between the electrodes is measured. The person's body fat percentage is then calculated from the results of the BIA. Early on, this method showed variable results. Newer equipment and methods of analysis seem to have improved this method.

Percent Body fat = $1.2 (\text{BMI}) + 0.23 (\text{age}) - 10.8 (\text{gender}) - 5.4$

CAUSES:

Common specific causes of obesity include:

genetics, which can affect how your body processes food into energy and how fat is stored

Overeating. Overeating leads to weight gain, especially if the diet is high in fat. Foods high in fat or sugar (for example, fast food, fried food, and sweets) have high energy density (foods that have a lot of calories in a small amount of food). Epidemiologic studies have shown that diets high in fat contribute to weight gain.

Medications- Medications associated with weight gain include certain antidepressants (medications used in treating depression), anticonvulsants (medications used in controlling seizures such as carbamazepine and valproate), some diabetes medications (medications used in lowering blood sugar such as insulin, sulfonylureas, and thiazolidinediones), certain hormones such as oral contraceptives, and most corticosteroids such as prednisone. Some high blood pressure medications and antihistamines cause weight gain.

Frequency of eating- The people who eat small meals four or five times daily, have lower cholesterol levels and lower and/or more stable blood sugar levels than people who eat less frequently (two or three large meals daily). One possible explanation is that small frequent meals produce stable insulin levels, whereas large meals cause large spikes of insulin after meals.

Physical inactivity. Sedentary people burn fewer calories than people who are active. The National Health and Nutrition Examination Survey (NHANES) showed strong correlations between physical inactivity and weight gain in both sexes. growing older, which can lead to less muscle mass and a slower metabolic rate, making it easier to gain weight. not sleeping enough, which can lead to hormonal changes that make you feel hungrier and crave certain high-calorie foods. pregnancy, as weight gained during pregnancy may be difficult to lose and might eventually lead to obesity. Certain health conditions can also lead to weight gain, which may lead to obesity. These include: polycystic ovary syndrome (PCOS), a condition that causes an imbalance of female reproductive hormones. Prader-Willi syndrome, a rare condition present at birth that causes excessive hunger. Cushing syndrome, a condition caused by having high cortisol levels (the stress hormone) in your system. hypothyroidism (underactive thyroid), a condition in which the thyroid gland doesn't produce enough of certain important hormones. osteoarthritis (OA) and other conditions that cause pain that may lead to reduced activity.

AETIOLOGY OF OBESITY

Obesity is not a single disorder but a heterogeneous group of conditions with multiple causes each of which is ultimately expressed as obese phenotype. Obesity involves complex aetiological links between the genetic, metabolic and neural frameworks on one hand and behavior, food habits, physical activity and socio-cultural factors.

Genetic considerations

Although obesity has a genetic component, it is not a simple genetic disorder. There is an underlying genetic predisposition to obesity on to which environmental factors are layered. The discovery of 'ob' gene, which was mapped to chromosome 7, has led to a renewed interest in understanding the patho-biological basis of genetic predisposition in obesity. The 'ob' gene codes for a hormone called leptin, a 167 amino acid protein and was supposed to be produced in white and brown adipose tissue and placenta. The leptin receptors are concentrated in the hypothalamus and belong to the same class of IL-2 and growth hormone receptors. Any mutation of 'ob' gene leads to improper coding of leptin, which further results in obesity. The effects of the 'ob' gene are mediated through effects on both energy intake and energy expenditure. Obesity can also be considered as a "complex trait" as many other genes coding proteins like apolipoprotein B, D, E, β 3-adrenergic receptor dopamine D2-receptor, tumor necrosis factor (TNF), glucocorticoid receptor etc. are associated with it. So far, 200 genes, gene markers and chromosomal regions have been associated with human obesity.

Psychological and other factors

Depression can sometimes lead to weight gain, as some people may turn to food for emotional comfort. Certain antidepressants can also increase the risk of weight gain. Quitting smoking is always a good thing, but quitting may lead to weight gain too. In some people, it may lead to excessive weight gain. For that reason, it's important to focus on diet and exercise while you're quitting, at least after the initial withdrawal period. Medications, such as steroids or birth control pills, can also raise your risk for weight gain.

Social Impact

The overweight stigma and attributable discrimination is documented in all the key areas of living, including growth and development, educational process, employment structure, and provision of health care. The obese individuals are most often ridiculed by their teachers, physicians, and public. At times they also suffer from discrimination, ridicule, social bias, rejection, and humiliation. Even specific obesity diagnostic or therapeutic procedure such as related anthropometric assessments could potentially affect their care givers professional attitude and subsequent clinical evaluation and service provision for obese persons when they are seeking care.

Weight-related discrimination, by itself is related to poor health behavior such as pathological overeating, binge eating or even sedentary life and decreased physical activity that in turn leads to greater weight gain. This vicious cycle, again strengthens the risk of exposure to weight-related discrimination.

OBESITY AND ASSOCIATED HEALTH RISKS:

DIABETES:

The condition most strongly influenced by body weight is type 2 diabetes. In the Nurses' Health Study, which followed 114,000 middle-age women for 14 years, the risk of developing diabetes was 93 times higher among women who had a body mass index (BMI) of 35 or higher at the start of the study, compared with women with BMIs lower than 22. Weight gain during adulthood also increased diabetes risk, even among women with BMIs in the healthy range. The Health Professionals Follow-Up Study found a similar association in men. Excess weight and diabetes are so tightly linked that the American Diabetes Association recommends physicians test for type 2 diabetes and assess risk of future diabetes in asymptomatic people ≥ 45 years old simply if they are overweight/obese, and regardless of age if

they are severely obese · Overweight raises the risk of developing type 2 diabetes by a factor of three, and obesity by a factor of seven, compared to normal weight · Excess weight in childhood and in young adulthood, and weight gain through early to mid-adulthood are strong risk factors for diabetes · While not every overweight/obese individual has diabetes, some 80% of those with diabetes are overweight/obese · Obesity itself raises diabetes risk even in the absence of other metabolic dysregulation (insulin resistance, poor glycemic control, hypertension, dyslipidemia) · While metabolically healthy obese individuals are estimated to have half the risk of their metabolically unhealthy counterparts, they still have four times the risk of those who are normal weight and metabolically healthy ·

Fat cells, especially those stored around the waist, secrete hormones and other substances that fire inflammation. Although inflammation is an essential component of the immune system and part of the healing process, inappropriate inflammation causes a variety of health problems. Inflammation can make the body less responsive to insulin and change the way the body metabolizes fats and carbohydrates, leading to higher blood sugar levels and, eventually, to diabetes and its many complications.

CARDIOVASCULAR DISORDERS:

Body weight is directly associated with various cardiovascular risk factors. As BMI increases, so do blood pressure, low-density lipoprotein (LDL, or “bad”) cholesterol, triglycerides, blood sugar, and inflammation. These changes translate into increased risk for coronary heart disease, stroke, and cardiovascular death:

Obesity and Coronary Artery Disease. Numerous studies have demonstrated a direct association between excess body weight and coronary artery disease (CAD). The BMI-CAD Collaboration Investigators conducted a meta-analysis of 21 long-term studies that followed more than 300,000 participants for an average of 16 years. Study participants who were overweight had a 32 percent higher risk of developing CAD, compared with participants who were at a normal weight; those who were obese had an 81 percent higher risk. Although adjustment for blood pressure and cholesterol levels slightly lowered the risk estimates, they remained highly significant for obesity. The investigators estimated that the effect of excess weight on blood pressure and blood cholesterol accounts for only about half of the obesity-related increased risk of coronary heart disease.

Obesity and Stroke. Ischemic (clot-caused) stroke and coronary artery disease share many of the same disease processes and risk factors. A meta-analysis of 25 prospective cohort studies with 2.3 million participants demonstrated a direct, graded association between excess weight and stroke risk. Overweight increased the risk of ischemic stroke by 22 percent, and obesity increased it by 64 percent. There was no significant relationship between overweight or obesity and hemorrhagic (bleeding-caused) stroke, however. A repeat analysis that statistically accounted for blood pressure, cholesterol, and diabetes weakened the associations, suggesting that these factors mediate the effect of obesity on stroke.

CANCER:

Obesity has long been understood to be associated with increased risk of esophageal, colon, pancreatic, postmenopausal breast, endometrial, and renal cancers. More recently, evidence has accumulated that overweight and/or obesity raise risk of cancers of the gallbladder, liver, ovaries (epithelial), and advanced cancer of the prostate, as well as leukemia.

RESPIRATORY DISORDERS:

Breathless, Sleep apnoea, Hypoventilation syndrome.

There are a number of ways in which obesity affects lung function. An increased amount of fat in the chest wall and abdomen limits respiratory excursion reducing lung volume. As the obesity worsens, so do the apnoeic episodes resulting in frequent awakening and the resultant sleep deprivation produces daytime somnolence.

MENTAL HEALTH:

The role of weight in mental health faces causal challenges, but what is clear is that obesity and adiposity are associated with anatomical as well as functional changes in the human brain. Studies in older populations have shown that BMI is inversely correlated with brain volume, and that obese older adults, compared to normal weight counterparts, show atrophy in the frontal lobes, anterior cingulate gyrus, hippocampus, and thalamus. In addition, obesity in children and adolescents (aged >9 years) has been associated with smaller orbitofrontal cortex gray matter volume, along with poorer performance in certain domains of executive function (e.g., inhibitory control). Being overweight in midlife increases risk of Alzheimer's disease, vascular dementia, or any type of dementia by 35, 33, and 26%, respectively; even higher risk is observed for obesity. Importantly, physical activity, even among overweight individuals, may stave off poor mental functioning: moderately active or highly active adult overweight Finns did not have significantly increased risk of poor mental functioning at a 7-year follow-up compared to those who were normal weight and highly active, but inactive and overweight patients presented a nearly 40% increased risk of poor mental functioning. Thus, exercise may play an important mediating role in the relationship between excess body weight and age-related cognitive decline.

Although a biological link between obesity and depression has not yet been definitively identified, possible mechanisms include activation of inflammation, changes in the hypothalamic-pituitary-adrenal axis, insulin resistance, and social or cultural factors.

REPRODUCTION:

Obesity can influence various aspects of reproduction, from sexual activity to conception. Among women, the association between obesity and infertility, primarily ovulatory infertility, is represented by a classic U-shaped curve. In the Nurses' Health Study, infertility was lowest in women with BMIs between 20 and 24, and increased with lower and higher BMIs. This study suggests that 25 percent of ovulatory infertility in the United States may be attributable to obesity. During pregnancy, obesity increases the risk of early and late miscarriage, gestational diabetes, preeclampsia, and complications during labor and delivery. It also slightly increases the chances of bearing a child with congenital anomalies.

The impact of obesity on male fertility is less clear. In a study by Hammoud and colleagues, the incidence of low sperm count (oligospermia) and poor sperm motility (asthenospermia) increased with BMI, from 5.3 and 4.5 percent, respectively, in normal-weight men to 15.6 and 13.3 percent in obese men.

GASTROINTESTINAL DISORDERS:

Fatty liver and cirrhosis, Haemorrhoids, Hernia, Colorectal cancer, Gallstones.

Gall bladder disease is the most common gastrointestinal disorder in obese individuals. Obese women have a 2.7 fold increase in the prevalence of gall bladder disease. There is an increased risk of gallstones in individuals having BMI of 20 kg/m² or more. The mortality rates of cancer of the stomach and pancreas were higher in obese individuals.

MUSCULOSKELETAL:

Excess weight places mechanical and metabolic strains on bones, muscles, and joints. Osteoarthritis of the knee and hip are both positively associated with obesity, and obese patients account for one-third of all joint replacement operations. Obesity also increases the risk of back pain, lower limb pain, and disability due to musculoskeletal conditions.

DIAGNOSIS:

BMI is a rough calculation of a person's weight in relation to their height.

Other more accurate measures of body fat and body fat distribution include:

skinfold thickness tests

waist-to-hip comparisons

screening tests, such as ultrasounds, CT scans, and MRI scans

blood tests to examine cholesterol and glucose levels

liver function tests

a diabetes screening

thyroid tests

heart tests, such as an electrocardiogram (ECG or EKG)

A measurement of the fat around your waist is also a good predictor of your risk for obesity-related diseases.

TREATMENT:

DIETARY CHANGES:

Reducing calories and practicing healthier eating habits are vital to overcoming obesity. Although you may lose weight quickly at first, steady weight loss over the long term is considered the safest way to lose weight and the best way to keep it off permanently.

Avoid drastic and unrealistic diet changes, such as crash diets, because they're unlikely to help you keep excess weight off for the long term.

Plan to participate in a comprehensive weight-loss program for at least six months and in the maintenance phase of a program for at least a year to boost your odds of weight-loss success.

There is no best weight-loss diet. Choose one that includes healthy foods that you feel will work for you. Dietary changes to treat obesity include:

Cutting calories: The key to weight loss is reducing how many calories you take in. The first step is to review your typical eating and drinking habits to see how many calories you normally consume and where you can cut back. You and your doctor can decide how many calories you need to take in each day to lose weight, but a typical amount is 1,200 to 1,500 calories for women and 1,500 to 1,800 for men.

Feeling full on less: Some foods — such as desserts, candies, fats and processed foods — contain a large amount of calories for a small portion. In contrast, fruits and vegetables provide a larger portion size with fewer calories. By eating larger portions of foods that have fewer calories, you reduce hunger pangs, take in fewer calories and feel better about your meal, which contributes to how satisfied you feel overall.

Making healthier choices: To make your overall diet healthier, eat more plant-based foods, such as fruits, vegetables and whole-grain carbohydrates. Also emphasize lean sources of protein — such as beans, lentils and soy — and lean meats. If you like fish, try to include fish twice a week. Limit salt and added sugar. Eat small amounts of fats, and make sure they come from heart-healthy sources, such as olive, canola and nut oils.

Restricting certain foods: Certain diets limit the amount of a particular food group, such as high-carbohydrate or full-fat foods. Ask your doctor which diet plans have been found effective and which might be helpful for you. Drinking sugar-sweetened beverages is a sure way to consume more calories than you intended, and limiting these drinks or eliminating them altogether is a good place to start cutting calories.

Meal replacements: These plans suggest that you replace one or two meals with their products — such as low-calorie shakes or meal bars — and eat healthy snacks and a healthy, balanced third meal that's low in fat and calories. In the short term, this type of diet can help you lose weight. Keep in mind that these diets likely won't teach you how to change your overall lifestyle, though, so you may have to keep this up if you want to keep your weight off.

PHYSICAL ACTIVITIES :

- Main role of exercise is the prevention of weight regain rather than causing weight loss . E.g. To lose 500g, an obese person has to run 7 km every day for a week or consume 500- kcal/ day energy deficit diet for a week

- The importance of sustained physical activity should be stressed

- Advice should be given on a structured exercise program and patients should also be encouraged to increase “every day” activities such as walking rather than using a vehicle for short distance travel.

- Benefits of exercise Modest contribution to weight loss in overweight and obese adults . May reduce abdominal fat. Increases cardiorespiratory fitness. Reduces cardiovascular and diabetes risks beyond that produced by weight reduction alone. May reduce loss of muscle mass associated with diet.

- Cardiovascular and respiratory adequacy should be assessed prior to making a plan for exercise.

- Aerobic exercise is of greater value than other forms of exercise.

- Exercise is initiated slowly, and the intensity increases gradually. Initial goal – moderate levels of physical activity for 30 to 45 minutes, 3 to 5 days a week. Long-term goal – accumulate at least 30 minutes or more of moderate intensity physical activity on most, and preferably all days of the week

- Resistance training (anaerobic exercises) e.g. Weight lifting can be cautiously added as an adjunct after the aerobic goal is achieved. Resistance training is valuable in minimizing muscle mass loss and is particularly beneficial in patients with diabetes, as it increases glucose uptake by muscles.

Behaviour modifications in the management of obesity:

Behaviour therapy in weight control refers to, a set of principles and techniques for obese individuals to help them modify eating, activity, and thinking habits that contribute to their excess weight (17). Information can be delivered to them individually or within groups, face to face and also through written, web-based or audiovisual materials.

BEHAVIOURAL CHANGE TECHNIQUES :

1. Self-monitoring of behaviour and progress . Patients keep detailed records of their food intake such as food diaries to record total caloric intake, total fat grams consumed and food groups used and also of physical activity by recording duration and intensity of exercise, and body weight with weight scales or body composition measures. Patients review the records with their health care provider to identify areas of success and areas that need improvement .
2. Goal setting When setting goals, clear and realistic goals should be set and specific goals facilitate a clear assessment of success as most patients have unrealistic goals, which will lead to patient being discouraged of lifestyle intervention
3. Stimulus control (e.g. recognizing and avoiding triggers that prompt unplanned eating) Stimulus control includes, examining the environmental cues and events that lead up to an overeating episode. Learning to avoid such stimulus will help to break the chain of events, which will proceed thereafter. Suggestions for ways patients can implement this strategy include eating only at the kitchen table without watching television, keeping no snack foods stacked in the house .
4. Cognitive restructuring (modifying unhelpful thoughts or thinking patterns) Cognitive reconstructing increases patient awareness of their self-perceptions.
5. Problem solving: Problem solving includes stress management in these patients, as stress is a primary predictor of relapse and overeating . Problem solving strategies will enable a patient to cope with the problems encountered during the process of lifestyle modifications.

PHARMACOLOGICAL THERAPY:

Obesity drug	Mode of action	Dosage	Effects	Expected weight loss	Common side-effects	Special considerations
Orlistat	Binds to lipases in the GI tract and blocks the digestion of dietary triglycerides	120 mg three times daily With meals	30% of ingested fat is unabsorbed and excreted May improve TC, LDL, TG, HbA1c	5% to 10% of the initial body weight, over one year	Mostly GI-oily spotting, flatus, fecal urgency/incontinence Fat-soluble vitamin malabsorption	Low-fat diet (d 30%) required to minimize side effects Supplementation of vitamin A, D, E, K
Lorcaserin	Selective serotonergic 2C receptor agonist Increases satiety and inhibits hunger effect	10 mg twice daily	May improve HbA1c	5 - 6% over one year	Headache, nausea, dizziness, fatigue	Hallucinogenic properties Serotonin syndrome
Phentermine	Induces central norepinephrine release leading to decreasing food intake	15-30 mg daily		5% over 12 weeks	Dizziness, dry mouth, difficulty sleeping, irritability, nausea,	FDA approved for only 12 weeks continuous use.

					vomiting, diarrhea or constipation	
Topiramate	In combination greater weight reduction than either agent alone	Low - 3.75/23 mg/d Mid - 7.5/46 mg/d High - 15/92 mg/d	May improve glycaemic control, dyslipidemia and hypertension	5 - 11% over one year	Headache, paresthesia, dry mouth, altered taste, dizziness	Avoid pregnancy due to increased birth defects
Liraglutide	Selective glucagon-like peptide-1 (GLP-1) receptor agonist Regulates appetite by decreasing hunger and increasing satiety	3 mg once daily Sub-cutaneousl y	May improve prediabetes, systolic BP, triglycerides	5 - 10% over one year	Nausea, diarrhea, vomiting, hypoglycemia when used in combination used in combination Rarely - acute pancreatitis acute cholecystitis	Increase heart rate by 2-3 bpm
Naltrexone	Dopamine and norepinephrine reuptake inhibitor and opioid receptor antagonist. Increases satiety and inhibits hunger effect	Starting dose- 8/90 mg daily Gradually increase upto, 32/360 mg /d in 2 divided doses by 4 weeks	May improve- triglycerides HDL, hs-CRP, HbA1c	5% - 10% over one year	Nausea, constipation, headache, vomiting, dizziness, insomnia, dry mouth, and diarrhea. Risk for suicidal thoughts associated with bupropion	Contraindicat ed in patients with seizures, opioid use, abrupt cessation of alcohol, benzodiazepi nes and barbiturates. May increase BP and heart rate

SURGERY:

BARIATRIC SURGERY :

In some people, weight-loss surgery, also called bariatric surgery, is an option. Weight-loss surgery limits the amount of food you're able to comfortably eat or decreases the absorption of food and calories, or it does both. While weight-loss surgery offers the best chance of losing the most weight, it can pose serious risks.

Weight-loss surgery for obesity may be considered if you have tried other methods to lose weight that haven't worked and:

You have extreme obesity (BMI of 40 or higher)

Your BMI is 35 to 39.9, and you also have a serious weight-related health problem, such as diabetes or high blood pressure

You're committed to making the lifestyle changes that are necessary for surgery to work

Weight-loss surgery helps some people lose as much as 35% or more of their excess body weight. But weight-loss surgery isn't a miracle obesity cure.

It doesn't guarantee that you'll lose all of your excess weight or that you'll keep it off long term. Weight-loss success after surgery depends on your commitment to making lifelong changes in your eating and exercise habits.

Common weight-loss surgeries include:

Gastric bypass surgery. In gastric bypass (Roux-en-Y gastric bypass), the surgeon creates a small pouch at the top of your stomach. The small intestine is then cut a short distance below the main stomach and connected to the new pouch. Food and liquid flow directly from the pouch into this part of the intestine, bypassing most of your stomach.

Adjustable gastric banding. In this procedure, your stomach is separated into two pouches with an inflatable band. Pulling the band tight, like a belt, the surgeon creates a tiny channel between the two pouches. The band keeps the opening from expanding and is generally designed to stay in place permanently.

Biliopancreatic diversion with duodenal switch. This procedure begins with the surgeon removing a large part of the stomach. The surgeon leaves the valve that releases food to the small intestine and the first part of the small intestine (duodenum). Then the surgeon closes off the middle section of the intestine and attaches the last part directly to the duodenum. The separated section of the intestine is reattached to the end of the intestine to allow bile and digestive juices to flow into this part of the intestine.

Gastric sleeve. In this procedure, part of the stomach is removed, creating a smaller reservoir for food. It's a less complicated surgery than gastric bypass or biliopancreatic diversion with duodenal switch.

Other treatments

Vagal nerve blockade is another treatment for obesity. It involves implanting a device under the skin of the abdomen that sends intermittent electrical pulses to the abdominal vagus nerve, which tells the brain when the stomach feels empty or full. This new technology received FDA approval in 2014 for use by adults who have not been able to lose weight with a weight-loss program and who have a BMI of 35 to 45 with at least one obesity-related condition, such as type 2 diabetes.

PREVENTION:

The prevention of obesity involves action at several levels i) Primary ii) Secondary iii) Tertiary. Objective of primary prevention is to decrease the number of new cases, secondary prevention is to lower the rate of established cases in the community and tertiary prevention is to stabilize or reduce the amount of disability associated with the disorder. When the attention is focused on the multifactorial condition such as coronary heart disease (CHD), primary prevention of this involves national programmes to control blood cholesterol levels and secondary prevention deals with reducing CHD risk in those with existing elevated blood cholesterol levels while tertiary action would be associated with preventing re-infarction in those who had a previous heart attack. However, this classification system for prevention of obesity results in a great deal of ambiguity and confusion. To avoid this, the US institute of medicine has proposed alternative classification of systems. The new system separates prevention efforts into 3 levels. Universal (or) public health measures (directed at every one in the population), selective (for a sub-group who may have an above average risk of developing obesity) and indicated (targeted at high risk individuals who may have a detectable amount of excess weight which fore-shadows obesity). However, preventive measures for any disorder may not be helpful in all cases hence, proper management strategies can be integrated along with prevention programmes.

We can prevent the obesity risk by doing regular exercise, eating healthy food and making a healthy diet plan by consuming a large amount of dietary fibres, vegetables and fruits, doing more cardiovascular exercise, taking enough sleep and avoid taking more stress

RESULT:

From above survey following result was obtained:

Out of people, 46.8% people thinks that they are obese and 53.2% of people thinks that they are not obese.

88.6% of people think that fast food consumption leads to obesity.

71.5% of people eat oily and junk food frequently.

58.8% of people never or rarely exercise.

86.8% of people thinks that obese people are more lazier.

89.9% of people think that obesity leads to anxiety and depression.

89.3% of people think that obesity can be genetic.

96.8% of people think that obesity can shorten life.

98.7% of people think that obesity is a risk factor for diabetes, BP and heart attack.

98.1% of people think that obesity can be cured.

CONCLUSION:

Overweight, obesity and their impacts in different dimensions of health must be considered as one of the most important public health priorities. There is a need for comprehensive strategies for prevention and control of obesity. However, there are likely to be many barriers towards strategies based on policies alone. The prevention and reduction of overweight and obesity depend ultimately on individual lifestyle changes and further research on motivations for behaviour change would be important in combating obesity.

Conflict of Interest

Authors declare no conflict of interest.

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