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Review Of Lifestyle Modifications Involved In Naturopathy Centers To Reduce Weight

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Abstract
Naturopathy rejuvenates and harmonizes the physiological status as a whole, attacks the disease all around by using physical as well as mental strengthening strategies. It helps in materializing the WHO definition of health as "not merely the absence of disease or infirmity but a state of complete physical, mental and social well-being." Naturopathy is the most befitting solution to restore and maintain health as it covers all aspects of our life style modification it includes various kinds of modern exercise as well as *yogasanas*, message and stress relieving techniques along with therapies like hydrotherapy, mud therapy, sun therapy. Obesity is believed as the outcome of overeating so various kinds of diet plan like laxative diet, fasting diet and detoxifying or cleansing diet are also practised to remove undesirable weight and waste material from the body. Given review covers all the aspects of lifestyle modification in detail to confront the problem of weight loss from all natural non invasive angles.

Key Words : *Obesity, naturopathy, laxative, fasting etc.*

1. INTRODUCTION

Obesity is the synergistic product of interaction between overeating and easy lifestyle. Naturopathy is the best solution to cure obesity as it is primarily concerned with both the aspects. Obesity is the epicenter of all the disorders. Medical statistics too show that obesity is correlated negatively and with longevity and positively with disorders like hypertension, cardiovascular diseases, diabetes mellitus, renal diseases, degenerative arthritis, breast and endometrial cancers and the like. There is a higher mortality among obese as compared to non- obese. Associated diseases of obesity are varicose veins, abdominal hernia, osteoarthritis of the knees and lumber spines, problems during pregnancy and menstrual irregularities, flat feet and psychological stress.The scientifically proven remedy for obesity is exercise, relaxation and other health promoting behaviors. Moreover, all drugs and medicines are inherently poisonous (Fry,1990). Surgery is a mechanical repair to correct disease and has nothing to do with the root cause of the disease. Apart from this, various health and wellness clinics have opened in the world, their semi scientific jargon is designed to impress and develop a false sense of security and ultimately empty the filled pockets. For transient and quick weight loss, man approaches modern superficial medicinal strategies that further multiplies the problem in the long run. These medicine systems are also out of reach of the common people as many people in India and other developing countries are living below poverty line. So, present work is an effort to showcase numerous approaches utilized for weight reduction of health seekers.

1.1 Definition

The earliest attempts to define obesity were based on body weight for height standards framed by Metropolitan Life Insurance Company (1959) for healthy people.

The term overweight is applied to persons who are 10 to 20 per cent above the standard weight and the term obesity is applied to persons who are 20 per cent or more above the standard weight (Robinson and Lawler,1982).Over weight and obesity are therefore relative terms but not synonymous. Usually, however, abnormally high body weight reflects accumulation of fatty tissue. On the other hand, excess body fat may occur in a person of relatively normal weight (Bennion, 1979).

Body mass index (BMI), a measure of relative body fatness and measured as the ratio of body weight (kg) to height in meters squared, is used to define obesity more precisely. A BMI of 25 to 29.9 is defined as pre-obese or over weight state, while a BMI of > 30 is considered as obese (James et al.1998; WHO1998)

Obesity represents increased amount of body fat and so has also been described in terms of body fat percentage. According to WHO (1995), obesity is characterized by per cent body fat $\geq$ 25 in males and $\geq$30 in females.

Obesity has now considered a disease. According to the Institute of Medicine, USA, obesity is a heterogenous disease that occurs when energy intake (i.e. calories burned) over time ,and only in some case obesity is caused by illnesses like hypothyroidism or is the result of medicines like steroids that can cause weight gain(Jain,2002).

According to Bray (2004), obesity is a chronic relapsing neurochemical disease where the problem lies in deranged neural circuitry responding inappropriately to a toxic environment.

The branch of medicine, which deals with obesity is termed as bariatric medicine, i.e. study of excessive body weight, its causes, prevention and treatment (Kopelman, 2005)

1.2 Prevalence of obesity

In 2000, the WHO declared obesity as a chronic disease, which therefore requires long term management (Costain and Croker, 2005).

According to Chopra and Galbraith (2002) obesity rate has now reached epidemic proportions with over 25 per cent of the population being obese in United States and 15 per cent in Europe. Western and westernized populations are now in a chronic positive energy balance. As a matter of fact US population is regularly gaining 0.8 -0.9 kg body weight each year(Peter and Wyatt,2002).With an uncontrolled obesity and overweight epidemic and its associated medical complications in the US approximately 30 per cent of adults and 45 per cent of children and adolescents are obese (Oglen et al,2006) .

There is a paucity of nationwide data on the prevalence of obesity in India as Goel (1997) and Gopalan (1998) reported that 32.2 per cent men and 50 per cent women were obese in high income group of India. Available data on the prevalence of obesity from different published studies suggest that the prevalence ranged from 10 to 50 per cent in different states of India.

Surveys conducted in rural South Indian States by the National Nutrition Monitoring Bureau (NNMB) for the periods 1975 to 1976, 1988 to 1990 and 1996 to 1997 showed that totals for overweight persons were 2.3,2.6 and 3.8 per cent for men and 3.4,4.1 and 6 per cent ,respectively for women showing an increasing trend (ICMR,2000).

1.3 Assessment / diagnosis of obesity

Most valid criteria that have been used to diagnose obesity are body weight, body mass index, and body fat distribution assessed as waist hip ratio.Details are revealed below:

1.3.1 Body mass index (BMI): many nutritionists opine that body weight is a crude parameter of obesity. In recent years, body mass index (BMI) has become the most widely used medical standard to measure overweight and obesity. The body mass index (BMI) was introduced in to population studies in 1835 by Quetelet and is also known as Quetelet's index.

According to Garrow (1986) and James et al.(1988) body mass index (BMI) 25-30 kg/m^2 is considered as obese grade I ,and $\geq$30.0 kg/m^2 as obese grade II. Body mass index (BMI) has been recommended for use among all age groups from childhood through adulthood (Cole,1991).

Table 1. WHO- proposed classification independent of age and sex:

BMI kg/m^2	Classification
<18.5	Under weight
18.5-24.9	Normal weight
≥25.0	Overweight
25-29.9	Pre-obese
30.0-34.9	Class I obese
35-39.9	Class II obese
≥40	Class III obese

Source: WHO,1998

This classification is currently used for all clinical and research purpose and for comparisons across studies internationally (Kuczmarski and Flegal,2000)
The International Obesity Task force (2002) proposed slightly different classifications of BMI categories for Asians (Table 2.5).

Table 2. IOTF-proposed classification of BMI

BMI kg/m^2	Classification
<18.5	Underweight
18.5-22.9	Normal weight
23-24.9	At risk for obese
25-29.9	Obese I
≥30	Obese II

Source: International Obesity Task Force (IOTF) and European Association for the Study of Obesity in Europe (2002).

Despite a potentially low sensitivity of BMI and fatness at low to moderate BMI's, BMI has high specificity in screening for high percentage fat values and provides a reasonable indication of nutritional status of adults (Rao and Vijayaraghavan,1999; Bray,2004).

1.3.2 Body fat distribution: calculating distribution of fat stores, in addition to the amount of fat is also instrumental in assessing obesity. Obese people can be categorized as android or gynecoid. Android obesity is with a large abdomen and small buttocks and thighs giving an apple shape to the body. It is common in men. Gynecoid obesity is the typical female obesity pattern showing a small abdomen and a much larger buttocks and thigh area or pear appearance (Haffner et al,1987).
The android obesity also known as abdominal obesity or centeral adiposity,is measured as waist hip ratio(WHR). According to poppy (1990),0.85 to0.90 is the acceptable upper limit of WHR for men and 0.75 to .80 for women i.e. WHR >.90 in men and >.80 in women indicating abdominal obesity.
A growing consensus suggest that waist circumference should be used rather than WHR to assess fat distribution in the body.In a statement by North America Association for study of obesity ,WHR was said to provide no advantage over WC alone; a WC cut off of 40 inches (102 cm) for men and 80 cm for women have also been suggested (Wang et al.,2005).

1.4 Complications associated with obesity/ morbidity or mortality associated with obesity
Obesity increases the risk of developing many diseases partly through the mechanical effects of the mass of extra tissues on the function of various organs and systems and partly as a consequence of changes in metabolism that it induces through the secretary products of the fat cells including cytokines, procoagulants, inflammatory peptides and angiotensinogen (Bray,2004).
Due to various health related problems, obesity is also associated with increased mortality rate. and some other problems as discussed below:

1.4.1 NIDDM (Non Insulin Dependent Diabetes Mellitus): Numerous studies depict that weight gain is associated with increased risk of diabetes. Enlarged fat cells become resistant to insulin so the excess glucose

remains in the blood, stimulating the insulin producing cells to secrete more insulin, leading to greater degree of fat storage; where as weight loss will restore insulin levels to normal. Enlarged fat cells may also be less sensitive to other hormones which promote fat breakdown. Non insulin dependent diabetes mellitus (NIDDM) occurs four times more often in overweight persons and around three quarter of those afflicted with this type of diabetes are obese (Aronson,1986).

Results of oral glucose test performed on 1000 subjects (BMI > 27.6 in men and > 28.3 in women) showed higher incidence of impaired glucose tolerance in obese diabetics and prevalence increased with abdominal obesity (Gray and Fujioka,1991).

Researchers believe that more than obesity per se, pattern of body fat distribution is an important risk factor for diabetes and CVD. According to Raghuram (1999), abdominal obesity has been associated with a higher prevalence of insulin resistance and diabetes in several epidemiological studies.

It has been reported that NIDDM arises first time in middle life and occurs commonly in the obese (Kopelmen,2005; Chatterji and Bandyopadhyay, 2006).However with increase in adolescent and childhood obesity, incidence of insulin resistance, diabetes and metabolic syndrome is increasing in teenagers and young adults (Sharma, 2004; Roche,2005).

1.4.2 Hypertension: Evidence for an association between obesity and hypertension has been presented, with more hypertension existing among obese than non obese. Obesity tends to increase, while weight reduction tends to reduce high blood pressure (Dryden, 1998).

The trial of Anihypertensive Intervention and management (TIAM) study showed that obesity caused 5 to 6 times more risk for hypertension and it caused 25-30 per cent variation in blood pressure. Further it was found that reduction of even 4-5 kg of body weight resulted in reduction in diastolic (11.6 mm H) and systolic (18.4 mm Hg) blood pressure (Wasserthei et al.,1992). According to McCarron and Reusser (1996), in up to 50 per cent of adults whose hypertension is pharmacologically managed, the need for drug therapy would be eliminated with only modest reduction in weight.

The results of the large international study of salt (INTERSALT) carried out in more than 1000 men and women revealed that a 10 kg higher body weight is associated with 3.0 mm Hg higher systolic and 2.3 mm Hg higher diastolic pressure. Similarly, data from NHANES III showed that the age adjusted prevalence of high blood pressure increased with higher levels of BMI in men and women and that the prevalence of hypertension in adults with BMI$\geq$ 30 was 38.4 per cent for men and 32.2 per cent for women, compared with 18.2 per cent for men and 16.5 per cent for women with BMI $\geq$25, a relative risk of 2.1 for men and 1.9 for women (Brown et al.,1999).

Distribution of fat around the abdomen has been reported to be an important predictor of hypertension. Some studies indicate that waist circumference (WC) is a better predictor of CVD and hypertension than BMI (Joshi,2002). In Tehran lipid and glucose study, increase of 1kg/m^2 in BMI was associated with increase of 0.79 mm Hg in diastolic blood pressure, and an increase of 1cm in WC caused increase of 0.33 mm Hg of systolic blood pressure (Mirmiran et al.,2003). However, Farin et al.(2006) found BMI to be as effective as WC in the prediction of these diseases.

Cardiovascular factors like hypertension and high triglyceride level occur at lower BMI and WC in Asian/Indians and a modest amount of weight loss beneficially affects blood pressure (Sharma,2004; Misra,2007).

1.4.3 Cardiovascular diseases: Obesity is the key factor in the development of congestive heart disease (CHD). Statistics indicate that over weight people are more likely to develop CHD and to die at a younger age than people of normal weight (Krause and Mahan, 1987). Saroja et al.(1988) have found that when an increased blood volume has to be circulated through an extra large body, more stress is laid on the heart and extra blood and energy are required for the metabolism of increased fat; and that heart size, blood volume, cardiac output, stroke volume are greater in the very obese individuals. The occurrence of arteriosclerosis was found to be 2.5 times more in obese subjects than in lean subjects (Sjostrom,1992).

Each kg of additional fat weight increases the cholesterol production in the body by 20 mg /day (Ghafoorunissa and Krishnaswami, 1994). The increased amount of circulatory triglycerides and cholesterol builds plaques and cause arteriosclerosis (Down,1997).

Obese individuals show an impaired endothelial mediated vasodilator response to biochemical agents, to insulin and to increase blood flow. Weight loss improves both arterial stiffness and endothelial function (Ziccardi et al.,2002).
Total and abdominal adiposity increases the risk of CHD and mortality among women(Shetty,2003). Findings of various studies have revealed that WHR is significantly and clearly associated world wide with the risk of myocardial infarction; where as BMI is only weakly associated (Kahn,2006).
Global data show that South Asians (Indians ,Pakistanis and Bangladeshis) have higher total and LDL cholesterol and triglycerides and lower HDL concentration and higher WHR and trunk skin fold thickness, which are associated with higher mortality and morbidity due to CHD at lower BMI range (Shetty,2003; Misra and Ganda ,2007).

1.4.4 Respiratory disorders: Obese people consequently, have difficulty in normal breathing, diminished exercise tolerance, higher frequency of respiratory infections (Kaushik,1998) and are predisposed to bronchitis and asthma (Sabarwal,1999; Joshi,2002).
At the extreme, very marked obesity leads to Pick-wickian syndrome, characterized by a plethora, hypoxia and respiratory acidosis, lethargy and somnolence due to decreased ventilation and accumulation of carbon dioxide in the blood (Srilakshmi,2003).
Obesity has also been associated with obstructive sleep aponea- a serious respiratory disorder in which the sufferer can stop breathing for 10 seconds or more while asleep, sometimes more than three hundred times a night (Wilding and Finer ,2006). Loud snoring, nocturnal hypoxia, frequent awakening and day time somnolence characterize the complication and this impairs their day time functioning. Obstructive sleep apnoea is a major cause of disability and mortality in the obese population (Costain and Croker,2005).

1.4.5 Cancer: Obesity has been reported as a primary determinant of risk for numerous cancers.
Obese people have chronically high estrogen levels due to the enzyme aromatase present in adipose cells. Aromatase causes increased conversion of androgens to estrogens. Persistent stimulation of breast and endometrial tissue by estrogenic compounds creates the predisposition to malignant transformation and cancers of breast and endometrium, ovary and cervix. Weight loss, however may break this cycle by lowering aromatase level, and thus estrogen production(Kaushik,1998).
Total obesity has been reported to increase the risk of developing cancers of the gall bladder, bowel, prostate, kidney and other organs two to five fold (Bansal and Bawa,2002;Shetty,2003;Nandy,2005).
High intake of dietary fat, especially, saturated fat has been associated with breast and uterine, prostate, lung and colon, rectal cancers, while exercise is considered to reduce the risk by causing loss of weight, pumping up the immune system and cutting the estrogen level (Wig,2005).

1.4.6 Gall bladder disorder: Many studies have shown that obesity is associated with high plasma cholesterol concentration and greater hepatic cholesterol secretion (Kaushik,1998; Sabarwal,1999; Srilakshmi,2003; Shetty,2003) and gall bladder dysfunction may prevent the gall bladder from emptying normally and completely (Kaushik,2005). A high dietary fat intake for a long period of time predisposes to gall stone formation because of the constant stimulus to produce more cholesterol as a necessary bile ingredient to metabolise fat (Shukla,2005).
There is a positive correlation between the waist fat and risk of developing gall stones (Kaushik,2005).

1.4.7 Effect on endocrine glands: Obesity and hormones are closely related. Experts agree that more than being the causes, hormonal imbalances are the results of obesity. Marked obesity results in menstrual abnormalities, reproductive endocrinal disorders, infertility and other endocrinal disorders (Zoadastra,1993). Patients with established obesity show many other changes in endocrine functions such as impaired glucose tolerance, diabetes mellitus and hyperlipidemia and increased triidothyronine (T_3) levels. Hyper-insulinemia follows the weight gain and reverses with weight loss, and is most likely a consequence of insulin resistance that accompanies the obese state (Considine et al.1996; Jain,2002).
Obesity is also associated with abnormalities of the hypothalamo-pituitary-adrenal axis and increased cortisol production, reduced growth hormone secretion (Bhadada,2002), leptin resistance and hyperleptinemia (Trayhurn,2003).

1.4.8 Psychological and emotional problems: The psychological effects of being obese may range from mild feeling of inferiority to very serious problems that may occur when the obesity bars the individuals from normal socializing. The obese individual is some times looked upon as one who is greedy,self indulgent or who has no will power or may experience social humiliation (Robinson and Lawler,1982). The obese person is self conscious and therefore, has psychological problems (Rajalakshmi,1990).
Among the youth,obesity may affect their academic performance, college acceptance and even marriage (Goel,1997). They are often made a target of jokes and ridiculed by both friends and teachers. Their inability to participate in sporting activities isolates them and there is a sense of insecurity (Kaushik,1998).
Rarely a patient develops a well defined neurosis, known as disturbance of body image. Such patients have a distorted view of their own body (Sabarwal,1999) and may need to see a psychiatrist (Bansal and Bawa,2002). Aesthetic considerations may make obese people anxious to avoid obesity. However, criticism and failure of repeated attempts to lose weight may result in unhappiness, guilt, shame, depression, low self esteem and poor quality of life (Chavan,2002).

1.4.9 Arthritis: In the opinion of Davis (1988), a number of problems of the skeletal system, including osteoarthritis, ruptured intervertiberal discs and other variety of bone and joint diseases are greatly benefited by weight reduction which reduces the pressure on the damaged structure and facilitates mobility.
Obesity increased the risk of disability among Finnish men and women because of the arthritis of the knee and hip (Rissanen et al.,1991). Heliovaara et al. (1993) reported that the risk is doubled for osteoarthritis of the hips and quadrupled for osteoarthritis of the knees due to obesity.
The mechanism of this heightened jeopardy for developing osteoarthritis in the obese patients are believed to be both the mechanical and hormonal (Fanari et al.,1995). Excess weight which adds to the amount of stress borne by joints leads to cartilage breakdown and erosion (Felson,1995), wear and tear degradation of the joints (Felson,1996). It was reported that being 20 pounds (9kg) over weight in twenties nearly doubled the chance of developing osteoarthritis in old age (Felson,1996).
Many recent studies have also confirmed that obesity is particularly associated with osteoarthritis of large and small joints and back pain (Viayalakshmi et al.,2005; Costain and Croker,2005).

1.5 Physical hazards of obesity: Obesity, according to Antia (1989) is a weighty problem. Excess weight gain gives rise to breathlessness on moderate exertion such as climbing stairs.
Obese people are more uncomfortable during warm weather because the thick layer of fat serve as an insulator. Because of lessened agility, obese people are more prone to the accidents of all kinds; at home due to tripping, at work place due to difficulty in avoiding moving parts of the machinery, and on the road due to inability to escape the traffic. They move more slowly because of the greater weight they have to carry (Rajalakshmi,1990).

1.6 Effect of obesity on mortality: The escalating epidemic of obesity is a major concern world wide because of its association with various non communicable diseases and shortened life expectancy. The markedly obese both men and women experience a higher mortality than individuals who are slightly obese or lean (Robinson and Lawler,1982).
The main risk of obesity is premature death due to heart disease, hypertension and other diseases (WHO,2000) in both smokers and non smokers, in developed as well as developing countries(Shetty,2003). Neville (2004) also concluded from a study of 242 trauma patients, that rates of multiple organ failure and death were significantly higher among heavier patients. It has also been reported that in the UK ,deaths linked to obesity shorten life expectancy by 9 years (Royal College of Physicians,2004).

2. Naturopathy and its role in reducing obesity
Thikavathi and Vijayalakshmi (2002) found from a study that nature cure treatment along with exercise and proper dietary restriction was an effective way to reduce weight and significantly improve the lipid profile of women. The diet of subjects under treatment consisted of only 408 kcal and 79 g protein /day in first phase and 774 kcal and 28 g protein in the second phase of treatment.
According to Vithaldas Modi (1980), the best reason to start slimming through naturopathy is that the principles of naturopathic treatment for obesity are the same as those of general dietetics treatment for it.

In both the cases balanced dieting, behaviour modification and healthy living habits are the main requisites for reducing or eliminating obesity.

Chaudhary (1994) reported from her study on role of naturopathy in treatment of obesity in adult women, that yogasanas and low calorie diet (1055 kcal/day) was a regular part of the protocol at the naturopathy ashram and that at the end of three months, average weight loss was 17.8 per cent along with significant reduction in BMI and WHR.

Parimala (2003) studied the role of allopathy versus naturopathy in the treatment of obesity . Sixty subjects taking allopathic (n=30) and naturopathic (n=30) treatment for obesity from both the sexes in age range of 30-40 years were selected and reported a considerable reduction in weight, BMI values, waist hip ratio and skin fold thickness, significant reduction in the levels of total cholesterol, LDL,VLDL and triglyceride and a slight increase in HDL level assessed at the end of the treatment showed that both the allopathic and naturopathic treatment were effective in weight reduction. However, All the subjects undergoing the naturopathic treatment felt that the naturopathy was the best natural treatment which is life long without any side effects.

Naturopathic treatment for obesity believes not only in its prevention but also in its cure. Besides reduction in weight, it also promises health through the application of the following nature cure therapies:

2.1 Diet therapy
2.2 Medicinal therapy through food
2.3 Fasting therapy
2.4 Physical exercise or yogasans

Besides these therapies, naturopathy also implies the physical, physiological and psychological benefits of the following methods to attain as well as maintain both physical and mental health of people:

2.5 Massage
2.6 Sun bath
2.7 Mud packs
2.8 Prayer
2.9 Relaxation technique

2.1 Diet therapy for obesity

Balanced diet is the key factor in success of naturopathic treatment of obesity. Balanced dieting involves ingestion of correct quality of food i.e. natural, wholesome, sumptuous and nutritious food, in proper quantity and in moderate amounts through correct mode of eating. As a result the process of dieto therapy automatically helps an obese to reduce weight and a non obese to maintain proper weight (Chowdhary,1994).

Naturopathy believes that natural foods properly selected, scientifically combined and judiciously administered have true remedial value for curing disease .The regenerative organic elements in such foods preserve the tissue from disorganization and putrefaction and bring back superb vitality, radiant health and resistance to diseases (Chowdhary,1994).

According to naturopaths, in health the function of food is to afford nourishment to the cells of the body in disease, the concentration is more on the removal of toxins and purification of blood. Therefore the cleansing diet and the laxative diet serve as important purifying measures in the treatment of obesity as well as other chronic diseases.

2.1.1 The cleansing diet: Jussawala (1995) considered it basically an eliminative diet, aims at removing all irritants and encumbrances leading to toxic conditions from the blood. It consists principally of vegetables and fruits. Vegetables are eaten raw or in the form of raw vegetable juice. Fruits are used fresh and not canned or preserved. Beside their high food value and low caloric content, they contribute roughage or bulk. The large quantities of soluble organic salts and their juices dissolve foreign matter in the blood and make it ready for elimination from the system hence they are effective in restoring health.

2.1.2 The laxative diet: According to Jussawala (1995) laxative diet contains foods which have the highest amount of cellulose to give the bulk necessary to stimulate peristaltic action. Lack of roughage leads to GIT troubles and auto intoxication. Bran is an excellent source of roughage. Raw fruits vegetables (preferabley seasonal varieties with their skins), bean sprouts, whole grain cereals and dry fruits in the form of laxative diet contribute tremendously to intestinal asepsis.

According to naturopaths 'eating sensibly'means to apply the 'one-third-two-third' rule in daily intake of food i.e. one third (or less) of the daily food to be selected from the proteins and starches such as curds, butter milk, cereals, bean sprouts etc. and two thirds (or more) of the day's total to represent foods such as juicy and other fruits, tubers, root, leafy and other vegetables.
According to Sir Robert Mc Carrison, an eminent food scientist "A perfectly constituted diet is that in which the principle ingredients are milk, whole grain cereals or mixture of cereals, green leafy vegetables and fruits. These are the protective foods. They make good the defects of other constituents of the diet, protect the body against infection and disease of various kinds and their use in sufficient quantity ensures physical efficiency."
In naturopathy the balanced dieting for attainment and maintenance of reduced weight involves curtailment of large amounts of fuel foods. As a result, the ideal lacto vegetarian diet comprises the following:

1) Whole grain cereals (with bran)
2) Seasonal fruits and vegetables in abundance
3) Dairy produce in fair quantities
4) Sugary-starchy foods in restricted quantities
5) Restricted salt
6) liberal amount of water

In naturopathy the too spicy, too hot, too rich, too salty and too concentrated food is discouraged as Jussawala (1995) explained in the characteristics of bland diet. Thus, to cure obesity, the appropriateness of both the quantity as well as the quality of diet is the most powerful aspects of the agency of nature cure for obesity.

2.2 Medicinal therapy through food

According to naturopaths, the degeneration of human health has been brought about by the departure from natural food and the only basis of possible regeneration is a return to it. They stress on the use of following foods, not only for their food values but also for their medicinal or therapeutic effects.

2.2.1 Water: A proper intake of water is essential as it rapidly gets absorbed into the blood to keep soluble those salts already in the blood and facilitate their secretion, thus preventing undue deposits and GIT problems.

2.2.2 Salt: The human body can obtain the natural organic salts from vegetables and fruits. The ingestion of excess of common salt exerts deleterious metabolic side effects. The kidney and sweat glands bear the added burden of elimination.

2.2.3 Honey: It provides satiety by rapid absorption and assimilation of invert sugar in it. It is a fairly good source of minerals and has mild laxative action. It is also an antiseptic. Honey being in predigested from, is especially suitable for children, old people, diseased and invalids (Krishnamurthy,2006). *Sushruta* said that – old honey takes away fat and therefore aids slimming.
According to Dr. H K Bakhru (2006) ingestion of honey is an excellent home remedy for obesity. It mobilizes the extra deposited fat in the body and puts it in to circulation which is utilized as energy for normal functions. One should start with small quantity of about 10 grams to be taken with hot water. The dose can be gradually increased.
Fasting on honey lime juice is water is highly beneficial in the treatment of obesity without the loss of energy and appetite. In this mode of treatment, one spoon of fresh honey should be mixed with juice of half a lime in a glass of luke worm water and taken at regular intervals. (Krishnamurthy,2006).

2.2.4 Amla: Amla is one of the richest natural sources of the vitamin C. The fresh amla juice contains 20 times as much vitamin C as orange juice (Jussawala,1995) and 15 times of lemon juice (Dewan,1998). It has great medicinal value. It is especially rich in pectin. Amla has cooling, diuretic and laxative effect and improves heart action (Dewan,1998).

2.2.5 Garlic: Its medicinal properties are due to the volatile oil, ' the sulphur compounds' (Srilakshmi,1997). It has germicidal qualities and is a blood purifier. Garlic has a remarkable prophylactic and curative value, especially in diseases of respiratory and the intestinal tract (Jussawala,1995).

2.2.6 Lemon: It is rich in citric acids, alkaline minerals and the anti scorbutic vitamin C it is a true bile drainer and a natural antisepticand good cleanser for body tissues and blood purifier (Dewan,1998). It helps considerably in the digestion and assimilation of the food (Cook,1980) e.g. it renders iron more assimilable by its conversion from ferric to ferrous from (Disler,1975; Derman,1980; Lynch,1997).

2.2.7 Orange: Besides being rich in vitamin C, these citrus fruits are conducive to health. They are beneficial to the functioning of digestive organs, the kidneys, blood vessels and nervous system (Jussawala,1995).

2.2.8 Apple: It contains abundance of minerals and vitamins. It is rich in pectin content which absorbs large quantities of water and so forms a bland smooth mass that lubricates the intestinal tract, stimulates peristalsis and helps cure various GIT disorders (Jussawala,1995).

2.2.9 Spinach: It provides roughage and serves as a great cleanser of the system. As Jussawala (1995) called it the "broom of the stomach." It is a good source of iron. Its vitamin C content enhances absorption of iron present in it by transforming it from ferric to ferrous, an easily assimilable form. Due to its higher mineral content (sodium, calcium and iron) it is an excellent blood purifier.

2.2.10 Cabbage: It is very rich in minerals and vitamins (especially vitamin C). Cabbage should be eaten raw, the longer it is cooked the more indigestible it becomes. It can be slightly steamed. It is a good muscle builder and cleanser (Jussawala,1995).
According to Dr. H K Bakhru (2006) cabbage is considered as an effective home remedy for obesity. Recent research has discovered in this vegetable a valuable content called tartaric acid which inhibits the conversion of sugar and other carbohydrates in to fat. Hence it is of great value in weight reduction.

2.2.11 Onions: The onion is carminative, diuretic, stimulant, anti-inflammatory, antispasmodic, stimulant and anticoagulant. It has strong antiseptic effect (Jussawala,1995).

2.3 Fasting therapy

According to naturopaths (Jussawala,1995; Bakhru,2000;Singh,2002) it sometimes happens that body is so heavily encumbered and the digestive organs so depleted that even though the diet is most carefully regulated for elimination, the proper elimination will not take place until the organs of both, digestion and elimination, have had a sufficient period of rest to recuperate their energies. A period of fasting(total obstinence from food) must then be restored to.
According to Jussawala (1995) fasting should not be confused with starvation. Fasting is constructive, starvation is destructive. Starvation can only begin when the time for breaking fast is extended.
A properly directed fast is not only beneficial but has its remedial value. Fasting is merely a digestive and physiological rest during which the body is enabled to devote all its energies to elimination and therefore, regain body vitality (Jussawala,1993).

2.4 Physical exercise or yogasanas

Many people become obsessed with the idea that proper food control will solve all their weight and health problems. While food can definitely reduce weight, repair adipose tissues and regulate body processes it must be remembered that food, however important is not the only factor governing health.
According to (Giridharan,1998) food and exercise are the twin pillars that support the temple of health. If either be neglected, the structure may fall. To become an enthusiast for either diet or exercise to the exclusion of other would lead to disappointment.
Vigorous walking is considered as the most suitable exercise, mainly for obese who, at least initially find the other exercises and yogasanas more strenuous and too taxing. Obese women are advised to take up exercise like washing clothes, sweeping and mopping, strolling and other light exercises. If willing they can exert on grind-stone and rice-pounding (Bakhru,2000).

Sinha (1996) noted that the practice of selected yogasanas along with consumption of a well balanced diet by obese resulted in average weight reduction of 1 to 1.5 pounds per week.
Joshi (2002) is of the view that yogasanas, when practiced for at least half an hour daily can help in weight loss and maintenance of reduced weight.
A study of 15,500 people revealed that 102 normal weight participants, who practiced yoga for four or more years of prior 10 years gained on an average 3.1 pounds fewer during the period than did the other 7000 normal weight people who did no yoga at all. Over weight participants who practiced yoga for four or more years, lost an average of 5 pounds over the ten years compared with average gain of 13.5 pounds for over weight participants who did no yoga. However, the findings were based on self reports of the participants and not on data gathered by clinical observation (Briley,2005).
Most researchers disagree that yoga per say can reduce weight. Chadha (2005) is of the view that the only way to burn fat is through aerobic exercise and since yoga can burn about 40 calories as compared to 100 in less than 30 minutes of moderate pace walking, it cannot cause significant weight loss unless combined with some aerobic exercise like walking, jogging, swimming or cycling.
Briley (2005) also noted that most yoga does not meet the American College of Sports Medicine's definition of moderate intensity exercise, i.e. exercise rigorous enough to burn calories. Researchers hypothesize that yoga's emphasis on developing body awareness and physical discipline supports the adoption of healthful dietary and exercise habits and thus indirectly affects weight control.
It has been reported that yogasanas make body toned, strong and flexible and speed up metabolism, resulting in slim figure. Forward bending like *Paschimottanasana* and *Uttanasana* result in flab free abdomen, while *Naukasana* and *Aradhmatseyndra* result in narrow small waist. Facial feature acquire a chiseled fat free look (Jain,2007).
According to Jussawala (1993) naturopathy one can not expect to enjoy sound health by observing proper diet and neglecting other laws of health. To attain and maintain proper health, it is necessary to observe natural laws such as fresh air and sunshine, rest relaxation and sleep, a right mental attitude correct posture etc. Therefore, naturopathy utilizes the physical benefits of following treatments too.

2.5 Massage

In naturopathy massage is useful for those who are too weak to take sufficient exercise and for those having fatty encumbrances. It is a passive exercise but according to naturopaths one should not become a slave to massage. Bakhru (2000) recommended heavy massage for obesity.

2.6 Sun bath

Sun rays enhance the circulation of blood in the body, the rays of rising sun besides eradicating many diseases (Bakhru,2000). According to (Rama Rao and Suryalakshmi,1999) facilitate the synthesis of calciferol, lack of which leads to crippling deformities.

2.7 Mud packs

Any soil free from artificial fertilizers or insecticides can be used to prepare, a mud pack. The pack can be directly applied to the skin or wrapping a cloth containing the mud around the affected part. Mud treatment increases blood flow and decreases congestion and pain(Dewan,1996)**.**

2.8 Prayers

Naturopathy aims at achieving a high level of mental health which necessitates spiritualization of the mind . According to naturopaths for obtaining or recovering health, one must cultivate peace of mind through right conduct. The means to attain mental purity and health are three fold, namely a thorough following of natural hygiene, faith in divinity and self restraint (Ihritki,1985).
Hence, obesity can be prevented and cured only by changing patient,s way of life. Dietitians and doctors have no cure for obesity, but they can help people to cure themselves, by giving advice on diet, exercise and by supporting them in their resolution to carry on with a new way of life, which is usually hard and difficult for a long time . thus the medical treatment for obesity is combative whilst the naturopathic treatment aims at cure i.e. the removal of cause by teaching an organized and effective way of life. It totally transforms an individuals life, by changing its physical, more and socio economic aspects.
Other methods are steam bath,sauna bath etc.

2.9 Relaxation techniques which help in stress management and hence behaviuor modification may be of help such as diaphragmatic breathing, deep muscle relaxation, meditation ,yoga, guided imagery, music therapy, dance therapy, aroma therapy, touch and massage therapy and humour therapy. These techniques provide distraction from the stressful event and are helpful in a myriad health related problems (Sabarwal,1999; Srilakshmi,2003).

Wing (2002) reviewed behaviour weight loss studies from 1996 to 1999, which resulted in mean short term weight loss of 10.6 per cent ((9.6 kg) during the treatment phase (21 week) and 8.6 per cent (6.0 kg) at a follow up (18 months).

Another review by Mulvihill and Quigley (2003) has also found good evidence for effectiveness of behavioural support techniques.

3.CONCLUSION

The all round behavioural approach of naturopathy stay has a composite positive result on weight reduction hence it can emerged as a more natural and healthy option of weight loss. As Chavan (2002) too states that diet ,exercise and behaviour modifications together can help in weight reduction and maintenance.So, naturopathy could be helpful in significant weight loss without any side effects.

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