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EFFECT OF NUTRITIONAL GUIDANCE ON THE SUBJECTS SUFFERING FROM UNDERWEIGHT

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ABSTRACT

The desire of a lean and thin look makes the young population to follow wrong patterns in diet and lifestyle. The young adults want to lose weight at any cost. The present study was carried out to counsel such patients who have BMI < 19. This study was carried out among youngsters to make them aware of the harmful effects of lower weight. To maintain a healthy weight is the main aim of this study. Forty subjects out of hundred found to have less BMI and were underweight. They were guided to eat healthy food and knowledge was imparted through charts and posters. It was found that the weight of subjects was increased and they reached at normal levels of BMI. The mean Weight of the subjects was increased from 44.16 ± 2.8 and 49.3 ± 3.69 .

INTRODUCTION

'Underweight' it is the term which is used to describe a person who has considerable lower weight as compared to a healthy human being. The person of BMI is lower than 18.5 is considered as underweight. It may result in low energy level. It is the failure of the system to consume the calories in an efficient way. World Health Organization uses the Body Mass Index to categorize weight status. The BMI is calculated as a weight in kilograms divided by the square of height in metre (kg/m). It is an accurate reflection of fat percentage in the majority of the adult population. It is not the major abnormality but there are various reasons due to which a person may suffer with this problem.

Genetics metabolism, poor consumption of food or illness are some of the common reasons. Moreover, people with gastrointestinal or liver problems may be unable

to absorb nutrients adequately, self starvation is another self created problem.

Some people prefer to eat food on odd times also accompanied by unhealthy food stuffs and hence calorie intake is unbalanced. Besides this, individual who are tense, nervous and extremely active i. e. In simple terminology the food intake is inversely proportional to the energy used by them. Energy may include physical exercise and mental strains. It is obvious that, if one falls ill then the demand for healthy diet increases, and if the demand is not fulfilled it may result in loss of appetite which leads to weight loss. Food intake may be affected by nausea, vomiting or diarrhoea. Elizabeth et al 2005 stated that inadequate intake, anorexia, abdominal pain, early satiety, constipation, psychological stress are some of the factors that affect individual suffering from underweight. Anorexia nervosa is a psychological eating disorder characterized by

somatic delusions that one is too fat despite being emaciated, and refusal to maintain a minimally normal weight for height and age. (Mathur,2008)

Individuals with anorexia nervosa refuse to eat the diet which is necessary to maintain normal body and weight for their age. Underweight may result in serious consequences like poor stamina, weak immunity resulting in frequent illness due to reduction in WBCs. According to Robert E. Black of the Johns Hopkins School of Public Health, "Underweight status and micronutrient deficiencies also cause decreases in immune and non-immune host defenses, and should be classified as underlying causes of death if followed by infectious diseases that are the terminal associated causes. In women, the problem is beyond our expectation, i.e. amenorrhea (absence of menstruation) and complications during pregnancy. It can also cause anemia and hair loss. And for young people the result is much more dangerous. We all are familiar with the term osteoporosis this is also called 'porous bones'. Which causes bones to break with minor reasons such as sneezing etc. After the occurrence of first spontaneous fractures the damage is often already irreversible.

WHO(1998) estimates that in developing countries about 245 million adults are moderately underweight and 93 million are severely underweight.

Underweight people must consume the diet which has healthy and adequate calorific value so that they may gain weight. Eg. Eating nuts, cheese, dried fruits etc. The alternative way to increase your weight is to take liquid nutritional supplements, such as Ensure and Boost. Weight lifting is also helpful in these cases.

Objectives of the present study is to give India a healthy and disease free life. Which can be attained by assessing the nutritional status and dietary patterns among young adults (18-22years) belonging to region of Delhi, NCR, assessing the prevalence of underweight in young adults (18-22years), to find out the cause of underweight in young adults (18-22years), to impart nutrition education to underweight subjects, the review of literature of the topic of research is not confined to India only, as underweight is an epidemic that has spread all over the world (WHO, 2000). So studies from different countries are included in current study. Underweight is a disorder that has become very common among the population since the last decade hence the research entitled "To Find Prevalence Of Underweight In Urban Young adults (18-22years) belonging to region of Delhi and NCR.

Meaning of Underweight: Underweight is a condition when the body is 10-20% less than expected for one's height, age and sex. If the body weight is less by 20% or more than IBW, then the person is considered to be underweight. Many underdeveloped countries face this problem due to poverty. The body mass index is the criteria to determine if a person is within the normal weight range or not. BMI < 20 comes within the ambit of underweight. People who are underweight may have an increased risk of anemia, heart irregularities and osteoporosis.

Etiology of Underweight : firstly high physical activity with the diet which is not enough for the body. This commonly occurs in people who are active, tense, and get little rest. Secondly, Poverty, like when people cannot meet their daily demands of food. Thirdly Genetics, If you've been thin since childhood and being thin runs in your family. You also may have a naturally small appetite. Moreover, Psychological factors. Also plays a major role like in patients with mental illness or anorexia nervosa who refuse to eat adequately .

Complications of Underweight: Underweight results in retarded growth in children. Immunity is reduced. It increases the chances of complications during pregnancy leading to preterm delivery and smaller babies. Risk during surgery is more in case of underweight people.

Treatment of Underweight : Dietary management -If you're underweight, aim to gain weight gradually until you're a weight that is healthy for your height and age. But keep in mind that this weightgaining must be healthy not merely by eating chocolates and fried food etc. Instead, aim for three meals and three snacks a day and base your diet on healthy eating principles. That means, Make meals with starchy carbohydrates, such as wholemeal pasta, brown rice, potatoes or lentils, as a base. Eat five portions of fruit and vegetables a day. Choose lean protein from meat, fish, beans and pulses. Get three portions of calcium a day. One portion is a glass (190ml or 1/3 pint) of milk, a yoghurt or a small matchbox-size piece of cheese. Cut down on saturated fat, found in processed meats, pies, cakes and biscuits. Put a bar on sugary foods and drinks such as chocolate, cakes and biscuits and sugar-rich soft drinks. Consider high-protein meats, which can help you to build muscle. Also, choose nutritious carbohydrates, such as brown rice and other whole grains. This helps ensure your body is receiving as much nourishment as possible, even if you're dealing with a reduced appetite. Include snacks which contain protein and carbohydrates like trail mix, protein bars or drinks, and crackers with hummus or

peanut butter. Also enjoy snacks that contain “good fats,” which are important for a healthy heart. Examples include nuts and avocado. The another way to gain weight is to eat mini meals - If you're struggling with a curbed appetite due to medical or emotional issues, taking in large portions of food may not seem appealing. While too much aerobic exercise will burn calories and ultimately work against your weight goal, strength training— such as weight-lifting or yoga—can help you gain weight by building muscle. Before beginning any major weight gain program, be sure to consult your family doctor. Being underweight may indicate an underlying health issue, which won't be corrected by diet changes. Your doctor also will be able to help you track your progress and make sure that healthy changes are taking place.

Social, psychological and emotional changes: Psychological factors influence eating habits to a great extent. Youngsters eat in response to negative emotions such as sadness, anger, boredom etc (Dixon, 2003). Low self esteem, depression, emotional discomfort are responsible for underweight. According to (Kapur, 2008) if you to a group of young girls and boys in an informal setting about their physical appearance, you will find the majority of them are dissatisfied with their weights as well as their physical appearance. Boys in general want to be taller and want to have more muscular bodies which in fact, is a healthy trend. Most girls, on the other hand, view themselves as fat and want to look slimmer. Sometimes the obsession with body weight may be so severe that it leads to eating disorders, primarily affecting adolescent girls, who have been previously a paralyzing fear to becoming fat. The purpose of this study was to see the association of dietary and physical pattern of the subjects as well as the effects of underweight in young adults (18-22). The method and material used for investigation are discussed under the following headings:

Hundred young adults who were unhappy with their weight, selected by purposive random sampling. The BMI was calculated using an equation given by Quetelet (1835). Then Forty Young Adults between 18-22 years of age were selected whose BMI was below 19 from the region of Gurgaon. The protocol of the study was explained to the subjects and their prior consent was taken beforehand.

Experimental plan

The study was constituted of phases and the classification of subjects was elaborated as under:

FIELD STUDIES- These studies consist of collection of data regarding general information, physical activity pattern, health record, assessment of

nutritional status by using dietary survey. The data related to the past three months of the medical of the samples was collected and analysed. The general information, history of cardiovascular disease, medical problems and clinical signs, dietary intake, physical activity pattern were taken by the developing the questionnaire in annexure-1. The general information of subjects related to age, education, occupation, marital status, family type and size, history of weight gain or loss, medical history were recorded by using the questionnaire. The information about the food likes and dislikes and dietary pattern of subjects was also obtained.

Anthropometric studies:

The height, weight were measured for all subjects before starting and at the end of the study for the control and experimental groups with standard methods.

Measurement of Height:

A vertical measuring rod attached to a platform was used to measure the height of the subjects. The height was measured by using the methods of Jelliffe (1996) and ICMR (2005). The subjects were asked to stand erect, bare feet on a flat surface with heels together and upper limbs touching closely to the sides of the body. The investigator stands on the left side of the subject. The anthropometric rod held in the right hand, was the back of the subject, touching heels, buttock and back of the head. The subject was held to be straight and the occipital protuberance by the little finger of the right hand, while holding the rod with thumb and index finger. The head was positioned such that the imaginary line drawn from tragus of the ear to the intra-orbital margin i.e. lower border of the socket of the eye (Frankfurt horizontal plane) was parallel to the ground. The head was held in the position and a gentle upward pull was applied to straighten the any curvature in spinal cord. Then the sliding headpiece of the rod was brought down so as to touch the crown firmly pressing the hair, taking care that the blade was in the sagittal Plane (midline) of the body. At the juncture the height was read from the window of the headpiece. The process was repeated thrice and a constant reading was obtained. The height was recorded in cms upto the nearest mm.

Measurement of Weight: The weight of the subjects was measured by using an electronic balance with 100 g of accuracy and by the methods of Jelliffe (1996) and ICMR (2005). The weighing scale was placed on a firm and a flat ground. The subject was made to stand on a platform of the balance bare feet and with minimal clothing. The weight was recorded in kilograms, to nearest 100 gms.

BMI was used to classify the subjects into grades/classes of overweight /obesity as classified by WHO(1998), is shown in table.no.1. It was calculated by using the formula given by quetelet(1835)-

$$\bullet \text{ Body mass index} = \frac{\text{weight}}{\text{height}(\text{metres})^2}$$

Table.no.1. BMI Classification

BMI	NUTRITIONAL GRAD	CLASSIFICATION
>_ 18.5- < 20.0	Low normal	WHO(1998)
>_ 20-<25.0	Normal	
>_ 25.0-<30.0	Overweight	
>_30- 34.9	Obesity I	WHO(1998)
>_35-39.9	Obesity II	
>_40	Obesity III	

RESULTS AND DISCUSSIONS

The general information was collected which is shown in Table.no.1. The table is self explanatory.

Table.no.2 : Demographic details of the subjects

POPULATION CHARACTERISTICS	RESPONSE	PERCENTAGE N=40
(1)	(2)	(3)
Occupation	Working	0
	Non-Working	100
Smoke or Chew	Yes	0
	No	100
Alcohol Intake	Yes	0
	No	100
Following a Diet	Yes	20
	No	80
Activity Level	Mild	10
	Moderate	70
	Active	20
Size of family	Small	20
	Medium	60
	large	20
Literacy level	Graduate	70
	Post graduate	30
Economic status	Low	0
	Medium	60
	high	40

n- no. of subjects

Table.no.3 The mean weight and Calorie intake before and after the study

Interventions	Weight of the subjects (kgs)	Daily Calorie intake (Kcals)
Before the study	44.16 ± 2.8	1477.9 ± 305.8
After the study	49.3 ± 3.69	2255.5 ± 200.6

Table.no.3 shows that the mean weight of subjects before the study was 44.16 ± 2.8 and after the interventions it was increased to 49.3 ± 3.69 . It was due to increase in the calorie intake of the subjects which was pre test as 1477.9 ± 305.8 and post test was 2255.5 ± 200.6 kcals.

There was significant increase in the weight and calories.

CONCLUSION

Today's modern world has stressed over the lean and thin body and more weight is considered as the villain. People get looks conscious as they are affected by the fashion world. The young adults eat less to remain thin and have low body weight but they forget that our body needs nutrition to survive. Many deficiency disorders arise due to less food intake and our metabolism is affected to a great extent. Through this study and effort was made to spread awareness among people about nutrition and wellbeing. As a famous proverb says – Let medicine be thy food and food be thy medicine. The subjects then followed the increased calorie plan and achieved healthy BMI and weight.

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