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Determination of the Prevalence of Obesity, Nutrition Habits and Food Consumption Frequency in Individuals Working in the Famagusta Medical Centre Hospital

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Abstract

Aim: The prevalence of obesity, nutrition habits and food consumption frequency in individuals was investigated.

Methods: The study was carried out with a total of 51 individuals between the ages of 22-58. Data were collected by questionnaire about personal information, nutrition habits and food consumption frequency.

- **Results:** The prevalence of obesity was found 13.9% in female and 13.3% in male. The waist circumference used to determine central obesity was found ≥94 cm in 80% of male individuals and ≥80 cm in 44.4% of female individuals.

Conclusion: Adequate and balanced nutrition is important to maintain a healthy body weight. Low fat or fat free dairy and meat products are suggested. Legumes, un-purified grains, vegetable and fruit should be consumed in sufficient frequency and amounts to increase dietary fibre intake. Exercising is essential in sustaining a healthy and quality life.

Keywords: Obesity; Nutrition habits; Food consumption frequency; Body mass index

Introduction

Obesity is a main public health and financial problem. It can be defined as an excess amount of body fat that health may be impaired [1]. It develops socio-culturel environment that supporting sedentary lifestyle and excessive food intake [2]. The prevalence of obesity among adults, adolescents and children is steadily increasing. Food intake is complex due to influence of several factors. Heredity, age, gender, food consumption, dietary habits and lifestyle can be considered among the factors affecting the prevalence of obesity around the world [3].

Biological factors such as hunger, appetite, taste, also expense, income, availability, social and psychological variables of mood, stress, and emotional factors have a vital role in food choice. Some people keep eating a certain food, despite not being hungry. Such behaviour activates the brain reward centre and alter the brain structure [4].

The body mass Index [BMI] is commonly used to show overweight and obesity in adults. In addition to BMI, various tools are available for identification of individuals with increased health risks due to 'central' fat distribution. The BMI is calculated by dividing body weight in kilograms by height in metres squared [BMI=kg/m^2]. A BMI of 30 kg/m^2 or above denotes obesity by the World Health Organization [WHO]. Individuals with a BMI at or above 30 kg/m^2 will have excessive body fat [5,6]. BMI is a measure showing the relationship between the height and weight of a person. However, it does not give anything information about the fat distribution throughout the body. Ideal body mass can be defined as under optimal health assumption, the weight that correlates with the lowest mortality and longest longevity. It is suggested that the BMI value of 22 kg/m^2 is associated with the lowest mortality rate. Classification of obesity with respect to BMI values is shown in Table 1 [3].

Individuals whose BMI indicates normal body weight but have high body fat percentage are defined as normal weight obesity. It leads to higher risk of developing metabolic syndrome, cardio-metabolic dysfunction and with higher mortality. It has been also reported that coronary artery disease patients with normal BMI and central obesity have the highest mortality risk as compared to other adiposity patterns. Further studies are required for an updated definition of obesity based on adiposity, not on body weight [7].

Assessment of the extent of intra-abdominal or 'central' fat accumulation can be undertaken by simple and convenient measures such as the Waist Circumference [WC] or waist-to-hip ratio. Measures well above the average increase the risk for cardiovascular disease and other forms of chronic illness. The risk of obesity-related metabolic syndrome and waist circumference in adults are presented in Table 2. It is believed that a health risk classification based on waist circumference alone is more suitable as a health promotion tool than either BMI or waist-to hip ratio, alone or in combination [5].

Waist circumference is used as an important and practical indicator in abdominal fat distribution and deterioration of health [2]. Balanced nutrition can be defined as the process of consuming nutrients as needed by the individual to sustain a healthy life. Healthy nutrition can be summarized as selection and use of appropriate methods in the production, storage, and cooking stages [8,9]. Thermogenesis decreases after fat loss. This results in the diminishing of resistance to lose fat. A reduction in hormone levels like leptin and thyroid hormones may increase energy intake after weight loss. During this process, adipocytes face cellular stress and therefore renewed fat storage. Among genetic behaviour, and environment, the most critical factor is diet in weight maintenance [9].

Regular physical activity combined low fat diet, is a successful way

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Classification	BMI (kg/m²)	
	Basic classification	Additional classification
Underweight	<18.50	<18.50
Severe thinness	<16.00	<16.00
Moderate thinness	16.00-16.99	16.00-16.99
Mild thinness	17.00-18.49	17.00-18.49
Normal range	18.50-24.99	18.50-22.99
		23.00-24.99
Overweight	≥25.00	≥25.00
Pre-obese	25.00-29.99	25.00-27.49
		27.50-29.99
Obese	≥30.00	≥30.00
Obese class I	30.00-34.99	30.00-32.49
		32.50-34.99
Obese class II	35.00-39.99	35.00-37.49
		37.50-39.99
Obese class III	≥40.00	≥40.00

Table 1: Assessment of body weight with respect to BMI.

Gender	Warning Limit (=BMI ≥ 25)	Action Limit (=BMI ≥ 30)
Female	≥80	≥88
Male	≥94	≥102

Table 2: Risk of obesity-related metabolic syndrome and waist circumference in adults.

to initiate a negative energy and fat balance. The fundamental target of a weight reducing program is lifestyle changes rather than directly caloric restriction. A healthy lifestyle characterized by healthy food habits and regular physical activity [5]. Being overweight or obese is frequently associated with diabetes, hypertension, hyperlipidaemia, coronary heart disease, stroke, gall bladder disease, osteoarthritis, sleep apnoea and respiratory problems, and some cancers [breast, prostate, colon, endometrial]. Obesity is additionally a multifactorial disease that develops from the interaction between genotype and the environment [1,5]. Because of the health risks of obesity, it ought to be prevented and treated. The methods used in the treatment of obesity are nutritional therapy, behaviour modification therapy, increasing physical activity, medications and surgery. The best results in treatment can be taken with nutritional therapy, behaviour modification therapy and increasing physical activity [3]. Daily regular physical activity along with a healthy nutrition is the most effective way in the prevention of chronic diseases [8]. Energy-restricted diet on weight loss programs along with regular physical activity increases weight loss. This is observed as the best selected way to provide fat loss while preserving muscle tissue and the ideal body composition [8].

Materials and Methods

The prevalence of obesity, nutrition habits and food consumption frequency in individuals working in the Famagusta Medical Centre Hospital was investigated. The study was carried out with a total of 51 individuals [36 female, 15 male] between the ages of 22-58. Data collection was through a questionnaire clearly stating that information to be collected will be on anonymous basis and be provided voluntarily. All participants agreed to this statement. Data were collected by questionnaire containing questions about personal information, physical activity status, nutrition habits and food consumption frequency. Anthropometric measurements [body weight, height, waist circumference] were also performed in individuals. Body Mass Index [BMI] value was calculated.

Results and Discussions

According to the World Health Organization, individuals who have BMI ≤ 18.5 kg/m² are underweight, 18.5-24.9 kg/m² are normal, 25.0-29.9 kg/m² are overweight and ≥30.0 kg/m² are obese. For the waist circumference, in men ≥94 cm, in women ≥80 cm is defined as central obesity. 29.4% of individuals were male and 70.60% of them were female. 86.7% of male individuals and 54.9% of female individuals are a graduate of high school or university. Body weight of examined individuals was between 46.5 kg and 98.0 kg. BMI was between 19.0-36.0 kg/m². The prevalence of obesity was found 13.9% in female and 13.3% in male individuals as shown in Table 3. The waist circumference used to determine central obesity was found ≥94 cm in 80% of male individuals and was found 80 cm in 44.4% of female individuals. The waist circumference measurement of individuals is shown in Figure 1.

It was determined that 74.5% of the individuals have not made regular physical activity. The status of skipping meals in individuals who participated in the study is demonstrated in Table 4. According to the evaluation of meal skipping, it was found that only 21.6% of the individuals did not skip 3 main meals. It was observed that the most skipped meal was breakfast among individuals who skipped meals. It was shown that decreased appetite and lack of time were the most important causes of skipping meals. It was found that most of individuals who had normal BMI skipped meals.

It was observed that 49% of the individuals consumed full-fat yogurt and 47% of the individuals consumed whole milk every day. It was determined that 70.6% of the individuals consumed beef and 55% of the individuals consumed lamb at least 1 time per week. Processed

BMI (kg/m²)'	Male		Female		Total	
	Number	%	Number	%	Number	%
Underweight: <18.50	0	0	0	0	0	0
Normal range: 18.5-24.99	3	20.00	25	69.44	28	54.90
Overweight (Pre obese): 25.00-29.99	10	66.67	6	16.67	16	31.37
Obese: ≥30.00	2	13.33	5	13.89	7	13.73
Total	15	100.00	36	100.00	51	100.00

Table 3: Assessment of body weight by BMI.

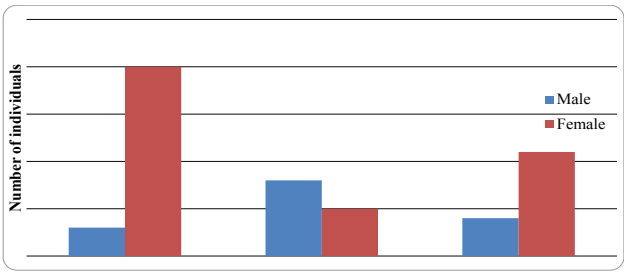

Figure 1: The waist circumference measurement of individuals.

BMI (kg/m²)	Status of skipping meals					
	Yes		No		Sometimes	
	Number	%	Number	%	Number	%
Normal	7	13.73	5	9.8	16	31.37
Overweight	7	13.73	5	9.8	4	7.84
Obese	2	3.92	1	1.96	4	7.84
Total	16	31.38	11	21.56	24	47.05

Table 4: The status of skipping meals in individuals who participated in the study.

meat products such as salami, sausages were consumed by 21.6% of individuals at least 1 time per week. Only 27.5% of the individuals consumed fish at least 1 time per week. All of the individuals did not consume turkey. 72.5% of the individuals consumed legumes at least 1 time per week. Only 52.9% of the individuals consumed vegetables and 58.8% of them consumed fruits every day. It was reported that 62.7% of the individuals have adding salt habit to meals without tasting food.

According to the findings, it was determined that individuals [including those who scored normal range of BMI] did not eat healthy. The frequency of consuming of food or food groups in daily, weekly or monthly periods is determined by the food consumption frequency form. This method is useful, reliable and valid method for identifying the relationship between diet and disease risk [10].

It has been demonstrated that both meal replacement and macronutrient composition manipulation have not beneficial influences on weight maintenance. Healthy food choices and healthy lifestyle behaviours are necessary for weight maintenance. A diet high in low glycaemic index, fruits, vegetables, whole grains, protein foods, nuts, canola, and olive oil can be effective for weight maintenance. Education on healthy eating behaviour and a diet such as DASH may help obese individuals to keep up their weight [11].

Statistical Reliability of Data

Sample data used in this study is not large enough to be a good representative of the population in general. Assuming BMI values are continuous and normally distributed, then the sample size n=51 enables the estimation of the unknown population mean BMI value based on the central limit theorem in statistics that $\frac{\bar{x}-\mu}{\sigma/\sqrt{n}}$ is standard normal. Here, $\bar{x}$ is the sample average, and for computation purpose the optimum BMI value 22 kg/m^2 is used, μ is the population mean, is population standard deviation. Hence, with n=*51* and at 95% confidence level the mean BMI can be estimated with an error margin of 0.5 kg/m^2. Therefore, comments made under the discussion of results hold with a high confidence.

In this study the main limitation was the lack of facilities to extend the investigation to a larger population, i.e. having a larger data set. Detailed study in required to determine calorie intake based on daily food consumption, and body composition analysis.

Conclusion

The prevalence of obesity around the world is increasing and therefore it is a disturbing global issue. Prevention of obesity ought to be among the high priorities in public health. Adequate and balanced nutrition is important to maintain a healthy body weight. Low fat or fat free dairy and meat products are suggested. Legumes, un-purified grains, vegetable and fruit ought to be consumed in sufficient frequency and amounts to increase dietary fibre intake. Exercising is essential in sustaining a healthy and quality life. Encouraging healthy lifestyles can be accomplished not only at the individual level, but also at group level. Further, NGOs, State Departments and food industries should take part in helping people to avoid obesity.

References

1. Islamoglu Y, Koplay M, Sunay S, Acıkel M (2008) Obezite ve metabolik sendrom. Tıp Araştırmaları Dergisi 6: 168-174.
2. Baysal A, Bas M (2008) Yetiskinlerde Agirlik Yonetimi. 1. Baski. Istanbul. Ekspress Baski AS.
3. Akbulut G (2010) Eriskinlerde sismanlıgın diyet tedavisindeki güncel yaklasımlar ve fiziksel aktivitenin onemi. In: Mised. Turkısh Pharmacısts Association 23: 86-90.
4. Singh M (2014) Mood, food, and obesity. Frontiers in Psychology 5: 925.
5. Bjorntorp P (2001) International Textbook of Obesity. New York, USA. John Wiley&Sons Ltd.
6. Shah B, Sucher K, Hollenbeck CB (2006) Comparison of ideal body weight equations and published height-weight tables with body mass index tables for healthy adults in the United States. Nutrition in Clinical Practice 21: 312-319.
7. Oliveros E, Somers VK, Sochor O, Goel K, Lopez-Jimenez F (2014) The concept of normal weight obesity. Progress in Cardiovascular Diseases 56: 426-433.
8. Tufekci Alphan ME (2013) Hastaliklarda Beslenme Tedavisi. 1. Baski. Ankara. Hatiboglu Yayinevi.
9. Soeliman FA, Azadbakht L (2014) Weight loss maintenance: A review on dietary related strategies. J Res Med Sci 19: 268-275.
10. Baysal A, Aksoy M, Besler HT (2008) Diyet El Kitabi. 5. Baski. Ankara. Hatiboglu Yayinevi.
11. Hirahatake KM, Slavin JL, Maki KC, Adams SH (2014) Associations between dairy foods, diabetes, and metabolic health: Potential mechanisms and future directions. Metabolism Clinical and Experimental 63: 618-627.