



## NUTRITIONAL STATUS OF STUDENTS AND EMPLOYEES OF AL-KUFA INSTITUTE AT AL-FURAT AL-AWSAT TECHNICAL UNIVERSITY, AL NAJAF PROVINCE

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### ABSTRACT

**Background:** Obesity is characterized as a medical problem. It is the accumulation of excess fat in the body tissues and may have unfavorable effects on human well-being. Body mass index (BMI) is determined by dividing a person's weight by the square of the person's height. A person with a BMI of 25–30 kg/m<sup>2</sup> is labeled as overweight, and a BMI of over 30 kg/m<sup>2</sup> is obese. **Objective:** This investigation aims to determine the nutritional status of students and employees of Al-Kufa Institute at AL-Furat Al-Awsat Technical University, located in Al Najaf Ashraf province. **Methodology:** A cross-sectional research was carried out at Al-Kufa Institute, AL-Furat Al-Awsat Technical University in Al Najaf province. This investigation was carried out from 24/12/2018 to 1/4/2018. Samples comprised of the students and the staff of Al-Kufa institute at AL-Furat Al-Awsat Technical University in Al Najaf Ashraf province, Iraq. **Findings:** This investigation indicated that the overweight prevalence in our sample was 31%, while obesity was 20.3%. 29.7% of the males were overweight, and 21.1% of them were obese. On the other hand, 34.1% of females were overweight and 18.7% of them were obese. It also was found that the overweight and obesity prevalence was increased in the youth category (18-28 years) and there is a correlation between age and nutritional status ( $p = 0.001$ ). 61.2% of overweight and obese respondents were smokers. This study recommended that the age group of 18-28 years is at risk of obesity, and employees should follow a diet, reduce the amount of internet use and video games, and make compulsory training exercises course.

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### Introduction

Obesity is a Latin word that means "stout, fat, or plump". Esuse is the past participle of edere (to eat), with ob (over) added to it. [1] Obesity is a medical issue that is described as the accumulation of excess fat in the body tissues, which may have unfavorable effects on human health. Body mass index (BMI) is determined by dividing a person's weight by the square of the person's height. A person with a BMI of 25–30 kg/m<sup>2</sup> is known as overweight, and a BMI of over 30 kg/m<sup>2</sup> is obese. [2] Obesity mostly occurs owing to the lack of physical activity, genetic susceptibility, and excessive food intake. Endocrine disorders, genes, mental disorders, and medications are the primary causes. The theory that said obese people eat little and they gain weight because of a slow metabolism is not fully confirmed. On average, due to the energy needed to maintain an enhanced body mass, obese people have a greater energy expenditure than their normal counterparts. [3]

Obesity is one of the death causes that can be preventable. It has increasing prevalence rates in adults and children. [4] As concluded previously, endocrine disorders, genes, mental disorders, and medications are the primary causes for limited cases. In contrast, increasing prevalence rates of obesity in society is related to an easily accessible and palatable diet, mechanized manufacturing, and increased reliance on cars. [5] In 2006, ten other possible contributors were identified to increase the prevalence of obesity, for example, endocrine disruptors and insufficient sleep. [6] Despite the evidence that supports the influence of these mechanisms on the increasing prevalence of obesity, that evidence is still unsatisfied, and the researchers stated that these are probably less important than the ones discussed in the previous speech. [7]

Smoking and obesity are major controversial public health issues and both of them are increasing globally. [8] Smoking has a significant contribution to many illnesses. Its increasing risk of cancer, complications of respiratory diseases and cardiovascular diseases, are also of the major leading preventable causes of death in developed and developing countries. [9] Smoking and obesity have complicated and not completely understood the relationship, and there are controversial and conflicting results have registered by the number of authors. [10, 11] Globally, obesity is considered the fifth leading reason for death and represents 44% of diabetes cases and 23% of ischemic heart disease. [12] Another study showed that the life expectancy of people who are obese and smokers is around 13 years shorter than never smokers and non-obese. [13] This research aimed to investigate the nutritional status of students and employees of AL-Furat Al-Awsat Technical University, Kufa institute in Al Najaf Ashraf province.

## **Material and Methods:**

### **Study Location:**

This study was conducted at AL-Furat Al-Awsat Technical University, Kufa institute in Al Najaf Ashraf province. It was carried out from 24/12/2018 to 1/4/2018.

### **Study Design and Sample**

A cross-sectional study was conducted to achieve the objective of this study. 300 respondents were chosen utilizing simple random sampling.

### **Inclusion and Exclusion Criteria**

#### **Inclusion Criteria**

Samples were the students and the staff of Al-Kufa institute at AL-Furat Al-Awsat Technical University in Al Najaf Ashraf province, Iraq.

#### **Exclusion Criteria**

The exclusions were the students and staff of other faculties at AL-Furat Al-Awsat Technical University in Al Najaf Ashraf province, Iraq.

### **Data Collection**

A structured questionnaire was used to elicit the information from the study participants. The questionnaire included the following information:

1. Socio-demographic data including age, gender, educational level, family income, geographic area of the sample, and their occupations.
2. Sample status and background information including weight, length, smoking status, and body weight index to get the nutrient state.

This structured questionnaire was filled by subjects.

### **Data Analysis**

Statistical Package for the Social Sciences (SPSS) version 22 was used to analyze the data. For descriptive data, the frequencies, percentages, mean, and standard deviation were calculated for selected numerical and categorical variables.

### **Ethical Considerations**

Ethical approval for this investigation was given by the Scientific Unit at the Kufa Institute. Also, the permission to perform this investigation was given by Al-Najaf Health Directorate, Centre of Training and Development of Staffs (ref: No.17376).

### **Results**

In this study, the age range was 18-61 years with a mean  $\pm$  SD of 24.19 $\pm$ 8.545, and it was normally distributed.

**Table 1.** Sociodemographic characteristics and nutritional status of respondents.

Age group (year)	Frequency (N=177)	Percent
18-28	261	87.0
29-39	12	4.0
40-50	16	5.3
51 or more	11	3.7
<b>Gender</b>		
Male	209	69.7
Female	91	30.3
<b>Geographical area</b>		
Urban	74	24.7
Rural	226	72.3
<b>Nutritional status</b>		
Underweight	3	1.0
Normal	143	47.7
Overweight	93	31.0
Obese	61	20.3

The result of this table shows that the age group of 18-28 years (87%) and males (69.7%) were the most prevalent groups. As for geographical distribution, the highest percentage of respondents were from rural areas (72.3%).

**Table 2.** Crosstab of nutritional status and some variables of respondents.

Variables	Nutritional Status					Pearson Chi-Square
	Under weight	Normal	Over weight	Obese	Total	
Gender						0.597
Male	3 (1.4)	100 (47.8%)	62 (29.7%)	44 (21.1%)	209 (69.7%)	
Age Group						0.003
18-28	3 (1.1%)	135 (51.7%)	80 (30.7%)	43 (16.5%)	261 (87%)	
29-39	0 (0.0%)	4 (33.3%)	4 (33.3%)	4 (33.3%)	12 (4%)	
40-50	0 (0.0%)	1 (6.3%)	6 (37.5%)	9 (56.2%)	16 (5.3%)	
51 or	0 (0.0%)	3 (27.3%)	3 (27.3%)	5 (45.4%)	11 (3.7%)	
Smoking status						0.010
Yes	0 (0.0%)	52 (38.8%)	48 (35.8%)	34 (25.4%)	134 (44.7%)	
No	3 (1.8%)	91 (54.8%)	45 (27.1%)	27 (16.3%)	166 (55.3%)	

This table shows that 21.1% of males had obesity and 29.7% of them were overweight. However, 18.7% of females had obesity and 34.1% of them were overweight. According to the age group, this study found that the most prevalent obese and overweight age group was 18-28 years. As for smoking status, 25.4% of respondents had obesity and were smoking, and 35.8% of them were overweight and were smoking.

**Table 3.** The correlation between nutritional status and other variables

Pearson Correlation	Nutritional Status	Gender	Age
Nutritional Status	0.0	0.457	0.000
Gender	0.457	0.0	0.008
Age	0.000	0.008	0.0
Spearman's rho	Smoking	BMI	
Smoking	0.0	0.002	
BMI	0.002	0.0	

The result of this table revealed that there was a highly significant correlation between nutritional status and ages of respondents (0.001). Besides, there was a highly significant correlation between smoking status and BMI (0.002).

## Discussion

A cross-sectional study was performed in a relatively short time. This investigation was conducted on 300 samples (209 males and 91 females). The overweight prevalence in our sample was 31%, while obesity was 20.3%, giving a total of 51.3%. 29.7% of males were overweight, and 21.1% of them were obese. On the other hand, 34.1% and 18.7% of females were overweight and obese, respectively. This study showed that the prevalence of overweight and obese females was more

than males, however, the prevalence of obesity in both groups was almost similar. These findings were in line with the results of Waleed (2010), who reported that 29.9% of males had obesity. [14] The stability of the economic situation might be the possible reason to improve socioeconomic conditions for people. The security situation in Iraq have contributed to enhanced overweight.

In 2002, Abbas *et al.* in Jordan have reported that the overweight prevalence for females was 32.9%, however, the prevalence of obesity was 37.6%, which was identical to our findings. [15] This finding could be associated with the comparable eating habits in the neighboring countries, or to the identical genetic constitution of both communities.

In the US, the prevalence of overweight and obesity was high (61%), which demonstrates that only 30% of the females were of normal weight. [16] Our findings revealed that there was an improvement in overweight and obesity prevalence, particularly in the youth group (18-28 years). There was a correlation between age and nutritional status ( $p=0.001$ ). This might be related to the reduction in physical activity, wrong habits, and using the internet and video games. For instance, the weight would increase by 10 kg at the end of 10 years if the bodyweight increase by only 1 kg per year. This type of relationship between weight and age has been reported by other authors. [17]

The results of this study also found that 61.2% of respondents were in overweight and obese classes and smokers. The presence of correlation does not necessarily reveal a causation relationship. Association between smoking status and obesity is a controversial discussion. [18] The study conducted by Coitinho *et al.* in Brazil found that smoking was also not associated with obesity. [19]

### Conclusions and Recommendations

1. The overweight and obesity prevalence in our research was 31% and 20.3%, respectively.
2. 29.7% of the males were overweight and 21.1% of them were obese. On the other hand, 34.1% of females were overweight and 18.7% of them were obese.
3. The prevalence of overweight and obesity enhanced in the youth category (18-28 years). There was a association between age and nutritional status ( $p=0.001$ ).
4. The findings of this investigation also revealed that 61.2% of respondents were overweight/obese and smokers.
5. This study recommended that the age group of 18-28 years is at risk of obesity, and employees should follow a diet, reduce the amount of internet use and video games, and make compulsory training exercises course.

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### Conflict of Interest:

The authors declare no conflict of interest.

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