

PREVALENCE OF OBESITY AMONG SAMPLE OF COLLEGE STUDENTS

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Article Received on
03 Oct. 2017,

Revised on 24 Oct. 2017,
Accepted on 14 Nov. 2017

DOI: 10.20959/wjpr201716-10014

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ABSTRACT

Background: Obesity and overweight are considered a public health problem due to their high prevalence in different age groups, mainly in young adults, as well as the short, medium, and long term consequences of obesity, obesity is one of the major disorders associated with the development of chronic degenerative diseases and their complications, with a consequent decrease in life expectancy and quality of life in the affected people. In fact, obesity is linked to 60% of deaths due to non- communicable diseases. **Objective:** To study the prevalence and factors associated with overweight and obesity among college science students. **Subjects and methods:** A cross-sectional

study started from 1st of November, 2016 to 15th of march, 2017. A total of 1008 students (384 male and 624 female) between 18 to =>24 years of age had been selected for the present study. The data was collected by direct interview with the students using close ended question and body anthropometry was taken to every participant (including weight and height were measure BMI was calculated and used to assess weight status). A questionnaire was distributed to each subject; Age, gender, dietary habits, sport activity and family history of obesity, the data was analyzed using SPSS version 22. Statistical significance was considered whenever the P value was equal or less than 0.05. **Results:** In this study about two thirds (63%) of the students were of normal weight; whereas the prevalence of overweight and obesity among them was 27.9% and 6.6% respectively. the prevalence of obesity was more common among male students compared to female (7.8% compared to 5.9%). The prevalence

of obesity in medical science college students nearly equal to the humanity science college students (6.9% compared to 6.4%). **Conclusion:** According to results obtained, the author concluded that overweight and obesity are a problem among college science students, despite the low prevalence of overweight and obesity in the studied sample as compared to prevalence in neighboring countries.

KEYWORDS: Prevalence; Overweight; Obesity; Students; Cross-sectional study.

ABBREVIATION: BMI, body mass index; SPSS, Statistical Packages for Social Sciences.

INTRODUCTION

Obesity is a key risk factor in the natural history of chronic diseases. The adverse effect of obesity is to emerge the population in transition of hypertension, hyperlipidemia and glucose intolerance, while coronary heart disease and long term complication of diabetes such as renal failure begin to emerge several years later.^[1] Obesity is a leading but preventable cause of death worldwide, with increasing prevalence in adults and children, and it is one of the most serious public health problems of the 21st century.^[2] obesity and overweight are considered a public health problem due to their high prevalence in different age groups, mainly in young adults,^[3] as well as the short, medium, and long term consequences because obesity which is one of the major disorders associated with the development of chronic degenerative diseases and their complications, with a consequent decrease in life expectancy and quality of life in the affected people.^[4] In fact, obesity is linked to 60% of deaths due to non-communicable diseases.^[3] Some contributing factors are said to include a global shift in diet towards increased calories, fat, salt, and sugar intake, a trend towards decreased physical activity due to the sedentary nature of modern work, transportation, and increasing urbanization.^[5] Excessive food intake, lack of physical activity, and genetic susceptibility.^[6] A few cases are caused primarily by genes, endocrine disorders, medications, or mental illness.^[7] In 2014, 600 million adults (13%) and 42 million children under the age of five were obese in the worldwide. Obesity is more common in women than men.^[8] The obesity is combination with unhealthy life style, such as smoking and physical inactivity, may increase the risk of chronic diseases. In this regard, nutritional knowledge may act as a deterrent against fast-food trend. Thus, universities may contribute significantly in reducing the prevalence of obesity among the young population through the promotion of healthy eating habits. Universities may provide an ideal forum for reaching out to a large number of young adults through nutrition education programs that may positively influence students'

eating habits by advocating for the adoption of healthy food choices.^[9] Global epidemic of overweight and obesity "globesity" is rapidly becoming a major public health problem in many parts of the world. Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Once considered a problem only in high income countries, they are now dramatically on the rise in low- and middle-income countries, particularly in urban settings.^[10] The epidemiological determinants of obesity are increasing age, sex, genetic factors, endocrine factors, ethnicity, socio-economic status, physical inactivity, eating habits, psychosocial factors, stress, alcohol, smoking, and drugs.^[11] The trend of fast food consumption among college students is increasing. This may be attributed to many factors.^[12] It has been demonstrated that diet quality (lower intake of fruits, vegetables and milk and higher intake of fast foods and soft drinks) declines from childhood to adolescence.^[13] Obesity is perhaps the most prevalent form of malnutrition and it has been estimated to affect 20 to 40% of the adults and 10-20% of children and adolescents in developed countries.^[11]

AIMS OF THE STUDY

To built an idea about prevalence of obesity in young age group in our country and factor associated with overweight and obesity and to determine relationship between sex and obesity.

METHODOLOGY

Design of the study: A cross-sectional study was carried out in Baghdad university and Middle technical university in order to achieve the objectives of the study by assessment college students.

Time of study: The study was carried out during the period 1st of November, 2016 to 15th of march, 2017.

Setting of the study: This study was performed in 4 college students science in Baghdad city. (Administration and economic College, Law College, Health and medical technology College and Nursing College).

The sample of the study: Convenient sample of(1008) college students(384) male and (624) female had been selected for the present study.

Data collection: The data was collected through the utilization of a developed questionnaire (Arabic version) and by means of interview with each students who is included in the study. data collection took place in two steps. The first step was to fill out the questionnaire and the second step was to perform the anthropometric measurements.

Data analysis: Analysis of data was carried out using the available statistical package of SPSS-22 (Statistical Packages for Social Sciences- version 22).

RESULTS

Table (1): shows that (23.9%) of the obese students aged 21years old. about half (55.2%) of female of all age group were obese, while (44.8%) of male were obese.

Regarding to the race (93.6%) of not obese students were Arabic, while (96.4%) of them are not obese were Kurdish students and (42.9%) were other races. about obese students (6.4%) were Arabic race, (3.6%) were Kurdish race, and (57.1%)of obese students were other race.

Most of the participants are living in urban area and their percentage is (83.5%) of not obese students and (85.1%) of the obese students are living in urban area, while (16.5%) of not obese students and (14.9%) of the obese students lived in rural area.

Only (20.1%) of the not obese students have job and (74.8%) of them who are satisfy by their physique, while (25.4%) of the obese participants have job and (44.8%) of them who are satisfy by their physique.

Regarding to the religion (93.5%) of not obese were Muslim, whereas (100%) of all Christian students are not obese and (75%) were other religions, while (6.5%) of obese students were Muslim and (25%) were others religion.

Table 1: Demographic characteristic of study sample.

Demographic characteristic		Body Mass Index (Kg/m ²):				P value
		Not obese (<30)		Obese (>=30)		
		No	%	No	%	
Age (years)	18	74	7.9%	1	1.5%	0.003*
	19	152	16.2%	11	16.4%	
	20	217	23.1%	5	7.5%	
	21	193	20.5%	16	23.9%	
	22	144	15.3%	13	19.4%	
	23	78	8.3%	8	11.9%	
	=>24	83	8.8%	13	19.4%	

Grand total		941	100%	67	100%			
Gender:	Male	354	37.6%	30	44.8%	0.244		
	Female	587	62.4%	37	55.2%			
Grand total		941	100%	67	100%			
Residence :	Rural	155	16.5%	10	14.9%	0.741		
	Urban	786	83.5%	57	85.1%			
Grand total		941	100%	67	100%			
Besides being a full-time student, are you employed?	Yes	189	20.1%	17	25.4%	0.300		
	No	752	79.9%	50	74.6%			
Grand total		941	100%	67	100%			
Are you satisfy by your physique?	Yes	704	74.8%	30	44.8%	0.0001*		
	No	237	25.2%	37	55.2%			
Grand total		941	100%	67	100%			
						Grand total(%)		
Race :	Arabic	911	93.6%	62	6.4%	973	100%	0.0001*
	Kurdish	27	96.4%	1	3.6%	28	100%	
	Others	3	42.9%	4	57.1%	7	100%	
Religion :	Muslim	921	93.5%	64	6.5%	985	100%	0.026*
	Christian	11	100%	-	-	11	100%	
	Others	9	75%	3	25%	12	100%	

Table (2): Shows that (1008) participants were included in this study. (6.6%) of the hole sample are obese, while (93.4%) are not obese. (384) of the participants were males, (7.8%) of them are obese. about female the total number of participants in this study are (624), (5.9%) of them are obese.

Table 2: Showed the number of students participant according to gender.

Gender	No.of study(%)				Total	(%)
	Obese	(%)	Not obese	(%)		
Male	30	7.8%	354	92.2%	384	100%
Female	37	5.9%	587	94.1%	624	100%
Total(%)	67	6.6%	941	93.4%	1008	100%

Table (3): Shows that (63.0%) of both male and female had a normal BMI. and (2.5%) of the hole sample was underweight, (27.9%) of the studied sample were overweight, while (6.6%) of them were obese.

Table 3: The nutritional status of college students according to Body Mass Index.

BMI (Kg/m ²)		No	%
Body Mass Index (BMI) (Kg/m ²)	Underweight (<18.5)	25	2.5 %
	Normal weight (18.5-24.9)	635	63.0 %
	Overweight (25-29.9)	281	27.9 %
	Obese (=>30)	67	6.6 %
Grand total		1008	100%

Table (4): this table show the relationship between meal pattern and BMI among students, about two thirds (65.7%) of obese students were consuming three main meals per a day, in addition more than half (52.2%) of obese student who are usually skipped dinner, nearly half (49.3%) of obese students who prefer to consume food prepared by all food processing.

Table 4: Relationship between meal pattern and Body Mass Index among sample students.

Meal pattern		Body Mass Index (Kg/m ²):				P value
		Not obese (<30)		Obese (>=30)		
		No	%	No	%	
How many meal you eat per a day?	One meal / day	-	-	-	-	0.062
	Two meal /day	227	24.1	23	34.3	
	Three meal / day	714	75.9	44	65.7	
Grand total		941	100%	67	100%	
The meal you are usually skipped?	Breakfast	111	48.9	10	43.5	0.720
	Lunch	16	7.0	1	4.3	
	Dinner	100	44.1	12	52.2	
Grand total		227	100%	23	100%	
Which food processing you prefer to consume?	Boiled	34	3.6	3	4.5	0.438
	Grilled	256	27.2	23	34.3	
	Fried	172	18.3	8	11.9	
	All	479	50.9	33	49.3	
Grand total		941	100%	67	100%	

Table (5): The results of the present study show that (74.6%) of the obese students use mobile or computer at rest time while the least percentage of the obese students riding motorcycle and their percentage was (1.5%) at the rest time.

Table 5. Distribution of obesity according to physical activity.

Physical activity		Body Mass Index (Kg/m ²):				P value
		Not obese (<30)		Obese (>=30)		
		No	%	No	%	
Watching TV	Yes	261	27.7	16	23.9	0.495
	No	680	72.3	51	76.1	
Grand total		941	100%	67	100%	
Use mobile or computer	Yes	657	69.8	50	74.6	0.406
	No	284	30.2	17	25.4	
Grand total		941	100%	67	100%	
Reading books	Yes	183	19.4	9	13.4	0.226
	No	758	80.6	58	86.6	
Grand total		941	100%	67	100%	
Sports activity	Yes	130	13.8	5	7.5	0.140
	No	811	86.2	62	92.5	
Grand total		941	100%	67	100%	

Walking for 30 mint or more	Yes	100	10.6	8	11.9	0.737
	No	841	89.4	59	88.1	
Grand total		941	100%	67	100%	
Riding bicycle	Yes	25	2.7	3	4.5	0.381
	No	916	97.3	64	95.5	
Grand total		941	100%	67	100%	
Motorcycle	Yes	17	1.8	1	1.5	0.851
	No	924	98.2	66	98.5	
Grand total		941	100%	67	100%	
House work	Yes	172	18.3	12	17.9	0.940
	No	769	81.7	55	82.1	
Grand total		941	100%	67	100%	

Figure (1): shows the relationship between obesity and type of study science, large proportion of them have normal weight.

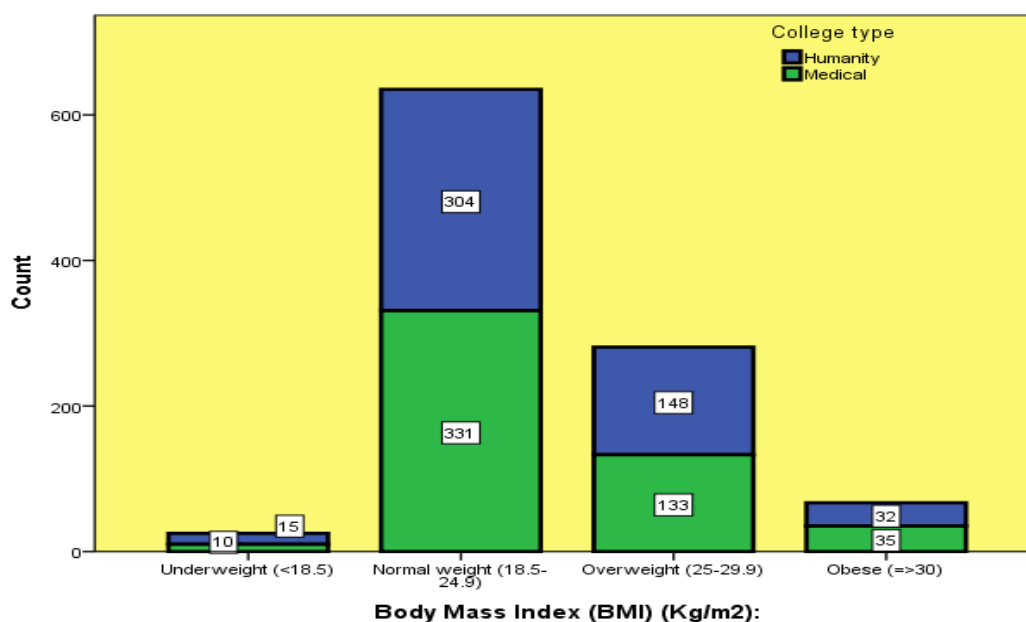


Figure 1: Relationship between type of studying science and the BMI of students.

DISCUSSION

The purpose of this descriptive study was to determine the prevalence of overweight and obesity and related risk factors among colleges students. Body mass index was used to assess weight status. Based on BMI classification of weight status, findings of this study indicate that the majority of students (63.0%) were of normal weight. Compared to other studies, only 45.8% of the King Saud University students in Riyadh, Saudi Arabia had normal body weight^[9] In this study, it is clear that the prevalence of overweight and obesity higher among males than female students, and these results are in agreement with the recent studies where

similar findings of prevalence of obesity among males of university students were reported.^[14]

In the present study found association between high BMI and number of meal/day, (34.3%) of obese students consume two meal daily and(65.7%) consume three meal daily. this is similarly study in Saudi Female University Students (48.2%) of students reported eating three meals per day.^[15] People who consume more calories than they burn off in normal daily activity or during exercise are more likely to be overweight^[16] Another study by^[17] found that most of the obesity risk or weight gain is directly related to bad eating habits such as skipping meals, eating away from home, and high consumption of fast food and processed, eating most of your calories at night, drinking high-calorie beverages all contribute to weight gain. As well as low consumption of fruit and vegetables.

In this present study show large proportion of obese students used mobile or computer (74.6%) and This study is supported by lack of physical activity, The importance of physical activity in the prevalence of obesity is evident from the present study. Lack of sports activity, more time spent on TV/computer and mobile, and inadequate aerobic exercise are significantly associated with overweight/obesity. this is similarly studies reported by^[18] conducted a study on Kuwaiti students and reported that more than two-fifths were physically inactive.

Inadequate dietary habits and lack of sufficient physical activity, as shown in industrialized European countries, are related to a high prevalence of overweight and obesity. According to the present study's results, the students with dieting behavior report excessive exercising physical activity. Previous studies reported that 80% of the students used physical activity as a weight control.^[19]

CONCLUSION

Overweight and obesity were more common among male students compared to females. Significant association was found between obesity and family history, No sex differences was found. The survey data showed that the majority of students get in this study had a normal weight. Therefore educational programs which encourage increased consumption of fruits and vegetables and increased physical activity are recommended for a good health as well as preventive strategy for university students.

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