

Eating habits of secondary school students in Erbil city.

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Abstract

Background and objectives: Adolescence are assuming responsibility for their own eating habits, changes in eating habits between 15 and 18 years were very slight, or obese. The aim of the study was to identify the eating habits of adolescent students of secondary school.

Methods: A cross – sectional survey study were carried out in three public Arabic secondary schools, (two schools for boys and one for girl) in Erbil city from the 1st /February/ 2011 to 30th / March / 2011. A systematic sample size of 461 students was selected.

Results: Total number of students was 461; majority (96.6%) of students was normal weight. The mean age \pm standard deviation was 16.34 ± 1.36 . Male students that are overweight were constituted only 3.4% of the total students. Adolescents having three meals per day are more overweight than those did not have it; those who have food between meals were less overweight than they did not have it. Snacking and light meal consumption was less among study subjects. Eating fruits daily were more common among overweight students than others. Adolescents drinking milk and eating milk products daily's were more overweight than they did not, while drinking soft drinks are less overweight than those did not. Eating fatty food last 30 days more abandon among overweight students than others

Conclusion: This study was able to identify the eating behaviours of a sample of Arabian secondary school students in Erbil city. Much more representative sample should be taken with concentration on interviewing techniques in the future works.

Keywords: weight status , adolescent , predicting obesity , physical inactivity ,fast food.

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Introduction: Nutrition is largely influenced in the family and school environments with the larger cultural context playing a role. The family is the primary environment for the developing child and is the earliest socializing agent for children's eating practices. Food practices and beliefs, the availability of foods in the home and the socioeconomic status of the family can all have a substantial impact on eating habits and the nutritional status of children. The prevalence of obesity and overweight among children and adolescents is increasing at different speeds and patterns in different countries (1).

During the past decade, weight gain increased especially in Saudi Arabia, Bahrain, Egypt, Kuwait, Lebanon and Tunisia (2). During adolescence, children displayed an increase in body fat, often associated with irregular meals, changing food habits and inactivity (3).

The high consumption of foods rich in fats and calories and the sedentary lifestyle among most communities in Mediterranean countries played an important role in the rise of obesity. This is particularly true with the great shift from traditional foods to more westernized foods, which are characterized by high fat, high cholesterol, high sodium and low fiber (4).

Consumption of soft drinks has been linked to weight gain among children and adolescents. Yet, by 2001-02, soda composed of 50% of the total beverage intake for U.S. teens aged 12-19, a 58.5 % increase since 1997. During this period, milk consumption decreased nearly 9% for teens and more than 20% for children aged 6-11. Kids are also eating much more fast food than they did in the past: nearly 20% of caloric intake among 12-18 years olds come from fast food, compared with 6.5% in the late 1970s (5).

Eating more and exercising less, nutrition experts agree, are primary causes for the recent increase in obesity and overweight among American children (4). Between 1985 and 2000, U.S. Department of Agriculture stated that: Americans ate more calories, refined carbohydrates, and fats without responding increase in the level of physical activity (6). the increased calories in American diets come from eating more food in general, but especially more of foods high in fat (meat, dairy, fried foods, grain dishes with added fat), sugar (soft drinks, juice drinks, desserts), and salt (snack foods) (7).

The aim of the study was to identify the eating habits of adolescent students of secondary school.

Subject and Methods

Study design and sample: A cross – sectional survey study were carried out in three public Arabic secondary schools, (two schools for boys and one for girl) in Erbil city from the 1st /February/ 2011 to 30th / March / 2011. A systematic sample size of 461 students was selected.

Materials and population: The population in this study involves selected students from three public secondary schools in Erbil city: Al- Zahra secondary school for girls with total number of 630 students, Al-Tachee secondary school for boys with total number of 645 students and Al- Akawaa secondary school for boys with total number of 639 students.

For the purpose of this study, a written official letters has been obtained from the College of Nursing and submitted to the allocated schools.

Procedure: This is an interview-based study, the data collected by the investigator that including general information as well as information on eating habits.

Statistical methods: Statistical package for social sciences was used for the purpose of data entry and data analysis. Descriptive data analysis was used to represent descriptive variables. Chi-square and Fisher’s exact test was used to calculate statistical associations.

Results: Total number of students was 461; the following table shows weight status of their frequency distribution. Majority (96.6%) of students were normal weight. The mean age \pm standard deviation was 16.34 ± 1.36 . The overweight male students that including both the overweight and the obese students were constituted only 3.4%, while all female students were recorded as having normal weight with significant association between male and female, (Table 1).

Table (1): Weight status by gender

Weight status	Gender		Total	P-value
	Male	Female		
	No. (%)	No. (%)	No. (%)	
Normal weight	255 96.6%	197 100%	255 96.6%	0.012
Overweight	9 3.4%	0 .0%	9 3.4%	
Total	264 100%	197 100%	461 100%	

Table (2) indicates that there were no significant association between weight status and three main meals /day at p- value 0.288 ,while (5.8%,18) of overweight students having three main meals /day versus (3.4% ,5) have not three main meals /day.

Table (2): Weight Status by three main meals per daily

Weight Status	Having three main meals daily		Total	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)	No. (%)		
Normal weight	140 96.6%	293 94.2%	433 95.0%	1.130 (1)	0.288
Overweight	5 3.4%	18 5.8%	23 5.0%		
Total	145 100.0%	311 100.0%	456 100.0%		

Table (3) indicates that there were no significant association between weight status and those eat food between meals at p-value 0.333, and (6.0%, 15) were overweight did not have food between meals.

Table (3): Weight Status by have food between meals

Weight Status	Have food between meals		Total	Chi-square (df)	P-value
	No	Yes			
	No (%)	No (%)	No (%)		
Normal weight	237 94.0%	195 96.1%	432 94.9%	0.948 (1)	0.330
Overweight	15 6.0%	8 3.9%	23 5.1%		
Total	252 100.0%	203 100.0%	455 100.0%		

Table (4) shows that there were no significant association between weight status and eating fruit /day at p- value 0.245, whereas (2.9% ,3) were overweight and did not eating fruit /day while (5.7% 20) were overweight and eating fruit /day

Table (4): Weight Status by Eating fruits daily

Weight Status	Eating fruits daily		Total	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)	No. (%)		
Normal weight	102 97.1%	332 94.3%	434 95.0%	1.350 (1)	0.245
Overweight	3 2.9%	20 5.7%	23 5.0%		
Total	105 100.0%	352 100.0%	457 100.0%		

Table (5) shows that there were no significant association between weight status and eating vegetable /day at p- value 0.301, and (5.7%, 19) were overweight with eating vegetable /day while (3.3% , 4) were overweight without eating vegetable /day.

Table (5): Weight Status by eating vegetables daily.

Weight Status	Eat vegetables daily		Total	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)	No. (%)		
Normal weight	118 96.7%	316 94.3%	434 95.0%	1.071 (1)	0.301
Overweight	4 3.3%	19 5.7%	23 5.0%		
Total	122 100.0%	335 100.0%	457 100.0%		

Table (6) shows that there were no significant association between weight status and drinking milk and eating milk products /day at p-value 0.188, (6.3%, 16) were overweight and drinking milk and eating milk products /day while (3.5%, 7) were overweight and did not drinking milk and eating milk products /day.

Table (6): Weight Status by drinking milk and eating milk products daily.

Weight Status	Drinking milk and eating milk products daily		Total	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)	No. (%)		
Normal weight	191 96.5%	239 93.7%	430 94.9%	1.735 (1)	0.188
Overweight	7 3.5%	16 6.3%	23 5.1%		
Total	198 100.0%	255 100.0%	453 100.0%		

Table (7) shows that there was no significant association between weight status and drinking soft drinks/day at p- value 0.216, and (6.2% ,14) were overweight and drinking soft drinks/day, while (3.6% ,8) were overweight and did not drinking soft drinks/day.

Table (7): Weight Status by drinking soft drinks Cross tabulation

Weight Status	Drinking soft drinks daily		Total	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)	No. (%)		
Normal weight	212 96.4%	213 93.8%	425 95.1%	1.529 (1)	0.216
Overweight	8 3.6%	14 6.2%	22 4.9%		
Total	220 100.0%	227 100.0%	447 100.0%		

Table (8) indicates that there were no significant association between weight status and Eating fatty food at p-value 1.00, and (4.8%, 19) were overweight with eating fatty food while (5.0%, 3) were overweight without eating fatty food.

Table (8) Association between Weight Status by eating fatty food last 30 days Cross tabulation

Weight Status	Eating fatty food		Total	P-value
	No	Yes		
	No. (%)	No. (%)	No. (%)	
Normal weight	57 95.0%	379 95.2%	436 95.2%	1.00
Overweight	3 5.0%	19 4.8%	22 4.8%	
Total	60 100.0%	398 100.0%	458 100.0%	

Table (9) indicates that there were no significant association between weight status and eating crackers at p-value 0.22, and only (1.6%, 6) of those overweight are eating crackers.

Table (9) Association between Weight Status by eating crackers (cake, biscuit, etc) last week Cross tabulation

Weight Status	Eating crackers		Total No. (%)	Chi-square (df)	P-value
	No	Yes			
	No. (%)	No. (%)			
Over weight	3 3.5%	6 1.6%	9 2.0%	1.335 (1)	0.222
Normal weight	82 96.5%	368 98.4%	450 98.0%		
Total	85 100.0%	374 100.0%	459 100.0%		

Table (10) indicates that there were no significant association between weight status and Eating fatty food at p-value 0.124, and (0.9%, 2) of overweight do not have breakfast daily.

Table (10): Weight Status by having breakfast daily Cross tabulation

Weight Status	Having Breakfast daily		Total No (%)	Chi-square (df)	P-value
	No	Yes			
	No (%)	No (%)			
Over weight	2 0.9%	7 2.9%	9 2.0%	2.214 (1)	0.124
Normal weight	212 99.1%	237 97.1%	449 98.0%		
Total	214 100.0%	244 100.0%	458 100.0%		

Discussion: This study identified a frequency of weight status among adolescents in secondary schools in Erbil city and found the effect of eating habits on weight status in this study.

Male adolescents were overweight more than female adolescents, it is in agreement with a study shows that the Minnesota's male students are more likely to be obese or overweight than female students (26.9% vs. 17.5%) (8).

Adolescents having three meals more overweight than they did not have it, that is not going with a study found that the Minnesota's adolescents who participated in regular family meals reported more healthful diets and meal patterns compared to adolescents without regular family meals. Eating regular meals also keeps your metabolism high which will burn more calories and help a person that is struggling with their weight (8-9). Those who have food between meals were less overweight than they did not have it. Snacking and light meal consumption was less among study subjects. The food pattern was characterized by irregularity of meal consumption. Although snacks can be a source of needed nutrients, it is important that they do not substitute for regular meals. Snacking is an established eating pattern among adolescents worldwide (10-11).

Adolescents eating fruits daily were more common among overweight students than others. The act of consuming fruits less than once a day increased the risk of overweight/obesity in 1.84 %. A study has shown that no fruit consumption was associated to elevated BMI values among adolescents; agreed with study on adolescents' profile in the USA which showed that overweight adolescents or those not satisfied with their own weights, surprisingly consumed less fruits and greens (10). Damascus study shows that only 11.8% of adolescent students consumed fruits 3 times or more daily in the previous week (12). In our study, adolescents drinking milk and eating milk products daily's were more overweight than they did not. By 2001-02, milk consumption decreased nearly 9 % for teens and more than 20 % for children aged 6-11 (9). Adolescents drinking soft drinks are less overweight than those did not, that is in agreement with a study stated that the consumption of soft drinks has been linked to weight gain among children and adolescents (13). By 2001-02, soda composed of 50% of the total beverage intake for U.S. Teens aged 12-19, 58.5 % increase since 1997. Kids are also eating much more fast food than they did in the past: nearly 20 % of caloric intake among 12- to 18-year-olds come from fast food, compared with 6.5 % in the late 1970s (14).

Present study showed that adolescents eating fatty food last 30 days more abandon among overweight students than others, this result is agreed with results of a study stated that the consumption of high-fat foods is thought to be a particularly powerful predictor of weight gain because of the efficiency with which fat is metabolized and its high caloric density and palatability (15), while those eating crackers (cake, biscuit, etc) last week less overweight than they did not have it. Adolescents having breakfast daily are more overweight than others did not have it, this is not in agreement with several studies had identified a possible role for breakfast consumption in maintaining normal weight status in children and adolescents, which may have important public health implications (16).

This study, like many others, has many limitations. First of all, using the food frequency questionnaire may be confusing for the students, especially questions related to eating snacks and continuity of having breakfast that should be clearly identified. Second: our study has focused on Arab schools adolescents that are not representative to all secondary school students as well as students living in rural area.

Conclusion and Recommendation: This study was able to identify the eating behaviours of a sample of Arabian secondary school students in Erbil city. Much more representative

sample should be taken with concentration on interviewing techniques in the future works.

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