

SOCIOECONOMIC CHARACTERISTICS, NUTRIENT INTAKES AND ANTHROPOMETRIC MEASUREMENTS OF ADOLESCENTS IN SOME SCHOOLS AT GIZA GOVERNORATE .

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ABSTRACT

The present study aimed to assess and evaluate the nutritional status, the dietary intake of the secondary school adolescents in Giza governorate. 308 students including 152 boys and 156 girls aged 13-17 years were randomly chosen from five public secondary schools representing different socio-economic levels. The anthropometric measurements were assessed .BMI was calculated, compared with the reference values. The twenty four hour dietary recall and socioeconomic status were recorded .The dietary allowance (RDA) were compared with RDAs.

Results indicated that the graduated father percentage under study was 67.9%, which was higher than that for graduated mothers (45.1%). A high percent of females' fathers were employee (70.5%), which was more than that of males' fathers (58.5%). About 50% of males' mothers were housewives that was slightly higher than those of females' mothers .Data showed a similar percents of both males and females' families having 5-6 persons .The mean energy intake was below the RDA. The mean daily intake of some vitamins were also lower than adolescents 'need such as , A,D,E,B6 and B12 vitamins .The intakes of calcium, iron and zinc did not satisfy adolescents requirements .Data showed that the frequency of sandwiches consumption showed the highest percent (93.83%) among those percentages of other items that consumed by the subjects under study. Meanwhile , (46.43%) of the subjects tended to eat koshary .Frequency distribution of the sample revealed that the male subjects recorded a high percent of under weight (42.8%) that was as double as that in the female students (25 %) .There were significant relations between BMI and each of fathers' education, mothers' education, family size and family income .There were significant correlations between BMI and each of calories, fat, proteins and carbohydrates intakes.

INTRODUCTION

Adolescence appeared to be a time of serious nutrition needs as adolescent body would undergo this intensive growth period. Adolescents need extra nutrients to support the adolescent growth spurt. Teens would need lots of energy for rapid growth and plenty of protein for muscle development. They also should have adequate mineral intakes; calcium for building bones, zinc for normal maturation, and iron for making blood cells, especially for teen girls (*Dayle, 2006* and *Key, et al.2008*).

The main worldwide nutrition problems affecting adolescents population would include under nutrition in terms of stunting, underweight, obesity, anemia, catch-up growth as well as the deficiencies of iron, zinc, calcium, iodine, vitamin A, and folate (*WHO, 2000*).

These problems could result from abnormal changes in the factors and their relationships with some variables such as socio-economic conditions of the family, meal patterns, physical activity, nutritional awareness, and food habits (WHO, 2004, and Kelishadi et al. 2007).

Social characteristics might affect health, development, and nutritional status among children and adolescents. The parents' educational level considered to be one of the most importance social and economic factors (Xie et al 2003. and Shi et al.2005).

In addition, Egypt as developing country is facing the double burden of malnutrition. The changed eating patterns of Egyptian population have been associated with increasing consumption intakes of fats and oil , high fat products, sugar, meat and refined carbohydrates. Thus the percentages of receiving more than 100% of energy recommended dietary allowances (RDAs) were increased and associated with the decrease in physical activity , could explain the high prevalence of obesity (Hassan et al 2006).

There was an apparent problem in bone mass accumulation that may reflect the very low calcium intakes. Calcium intake level among Egyptian adolescents is far below the recommended international figures preventing osteoporosis (National Nutrition Institute/UNICEF, 2002).

In Egypt, the survey supported by WHO (2000) demonstrated the assessment of the nutritional status of adolescents (14 ≤18 years).By determining the percentile of height – for – age ,20% of adolescents were stunted .The percentage of stunted males was much more that for stunted females (30.4% vs 11.9 %, respectively).Obesity was more prevalent (15.3%) among females than males (10.9%). Obesity was more existed in Cairo and Alexandria (19.5% and 15% respectively) compared to the other studied governorates.

Egypt's demographic momentum has demonstrated cohort of young people between ages of 10 and 19 exceeding 13 million. Enabling this generation for successful transition to adulthood would have profound effects on Egypt's ability to sustain its development trajectory (National Survey of Adolescents, 2003). According to Central Agency for Public Mobilization and Statistics (2006), the Egyptian adolescents comprises about 22.6% of total population

Unfortunately, the studies concerned with assessing and evaluating the nutritional status of Egyptian adolescents seemed to be limited. Thus, this study was designed to assess the current nutritional status of Egyptian male and female adolescent students in some different secondary schools at Giza governorate and its relation to their socioeconomic characteristics.

SUBJECTS AND METHODS

Subjects and place of the study:

The study included 308 adolescents,(152 males and 156 females) aging 13-17 years old ,these subjects were randomly chosen from five public secondary schools in different places located at Giza Governorate The distribution of students was shown Table (1).

Table 1: Students' distribution according to their sex.

Schools	Males		Females		Total	
	No	%	No	%	No	%
El Saadia boys secondary school	85	55.9	-	-	85	27.6
El Giza boys secondary school	19	12.5	-	-	19	6.2
Abd El Nasr experimental secondary school	48	31.6	46	29.5	94	30.5
El Giza girls secondary school	-	-	28	17.9	28	9.1
El Agoza girls secondary school	-	-	82	52.6	82	26.6
Total	152	100	156	100	308	100

Data were collected through personal interview with students in their schools to fill the questionnaire sheet from the standpoint of socioeconomic characteristics of their families, adolescent data (age and sex) and food intake.

Food intake:

Repeated twenty-four hour recall method was used to determine the consumption foods and beverages for three days (three recalls), included one day as a holiday and other different days to estimate the mean values and percentages of macronutrients intake using computer programmer (*WFDAS, 1995*). These intakes were compared with the recommended daily allowances set in (RDA) according to (*NRC/ FNB, 1989*).

Anthropometric measurements:

The anthropometric measurements were assessed according to *Lee and Nieman (2003)*.

Body mass index (BMI) was calculated using the standard formula: weight (Kg) /height (m²) according to *Dennis and Styne (2001)* BMI values were evaluated as following :

- underweight < 5th percentile
- Normal 5th - < 85th percentile
- At risk of overweight 85th- < 95th percentile
- Overweight ≥ 95th percentile.

Statistical Analysis:

The obtained data were statistically analyzed according to *Freund and Simon (2001)* using the statistical package for social sciences (*SPSS, 2001*).

RESULTS AND DISCUSSION

Data in table (2) showed student families' distribution according to parent's social parent's characteristics . It could be noticed that the high percentage of the studied adolescents' fathers were graduated (67.9%) that was higher than that in the case of their mothers (45.1%). Meanwhile, lower percent of fathers having secondary education level was recorded compared to their mothers. However , small percentages of fathers and mothers were illiterate , just read & write and ended preparatory schools . Such data indicated to the high level of parent's education . In addition , higher education level was observed for fathers compared to that of mothers.

These results are in the same line with the those of *UNICEF (2003)* , demonstrating that the percentage of illiteracy among females was higher than that among males. In this concern , a similar trend was observed by *Hassan et al (2007)* who found that small minority of girls' fathers were illiterate , while the majority of them showed better educational levels.

Concerning fathers' occupation , a higher percent of females' fathers were employee (70.5%) than that of males' fathers (58.5%).While males' fathers who were laborers and teachers showed higher percent compared to those of females' fathers.

Regarding mother's occupation , it was noticed that about 50% of males' mothers were housewives that was slightly higher than females' mothers . On the contrary , the percentage of females' mothers who were employee showed higher percent compared to that for males' mothers. The percentages of mothers who were working as housemaid were extremely low. Such percentages accounted to 2.6 % and 5.9% for females and males mothers , respectively .These results agreed with those findings of *EL-Kherbawy (2004)* who found that the majority of mothers were housewives, while the rest of mothers were working. Slight difference were noticed between the occupations of female' and male' mothers.

Table 2: Adolescents' families distribution according to their social characteristics.

Items	Males		Females		Total	
	No.	%	No.	%	No.	%
Fathers' Education level :						
Illiterate and read & write	9	5.9	10	6.4	19	6.2
Ended preparatory school	6	4.0	4	2.6	10	3.2
Ended secondary school	23	15.1	47	30.1	70	22.7
Graduate	114	75.0	95	60.9	209	67.9
Mothers' Educational level:						
Illiterate and read & write	13	8.5	13	8.4	26	8.4
Ended preparatory school	8	5.3	15	9.6	23	7.5
Ended secondary school	59	38.8	61	39.1	120	39.0
Graduate	72	47.4	67	42.9	139	45.1
Fathers' Occupation status:						
Laborer	13	8.6	5	3.2	18	5.8
Employee	89	58.5	110	70.5	199	64.6
Private work	32	21.1	32	20.5	64	20.8
Teacher	18	11.8	9	5.8	27	8.8
Mothers' Occupation:						
Housemaid	9	5.9	4	2.6	13	4.2
House wife	79	52.0	76	48.7	155	50.3
Employee	64	42.1	76	48.7	140	45.5
Family size(persons):						
Up to 4	36	23.7	31	19.9	67	21.8
5-6	108	71.1	112	71.8	220	71.4
7& more	8	5.2	13	8.3	21	6.8
Total	152	100	156	100	308	100

Data in Table (2) also showed similar percent of families having 5-6 persons for males and females. About one fifth of families tended to have up to 4 persons (23.7 % and 19.9 % of males and females' families , respectively). Only the minority of the families under study had 7 or more persons .These results might be attributed to family spacing awareness and practices women employment, and / or the high education of parents levels . These results agreed with those findings of *Hassan et al (2007)* who found

that families of secondary public school students tended to have 4-5 persons . In this respect , *EL – ghandour (2000)* found that the number of children in the family might affect the degree of parents' care and attention, which might be given to children.

The result in table (3) showed the students' distribution (females & males aged from 13 -< 15 years old) according to their mean nutrients' intakes and as percentages of the recommended dietary allowances (*NRC / FNB , 1989*). From these results , it could be noticed that all the nutrients' intakes for the female for the female adolescents under study were lower than their RDAs except those of protein , vitamin B12 and folate , which exceeded their recommended intakes . Similar trend was observed for the exceeded nutrients in the case of male adolescents in addition to vitamin A that just covered the male students needs . It was noticed that the exceeded nutrients intakes for male adolescents needs were higher than those in the case of females . However results in the same table showed that the percentages of RDA for energy , vitamins , D,E,B2 , B6 and Zinc intakes for the female adolescents were lower than the required amounts but still higher than those in the case of male adolescents . on the contrary the intakes compared to RDA for vit c , vit B1 and iron of male adolescents were higher than those in the case of females . Meanwhile, the remaining nutrients of RDA percentages were similar in both females and males . It could be concluded that the sufficiency of same nutrient intakes could be attributed to that the males and females tended to eat more cereals and legumes in their meals and snacks such as koshary and sandwiches (medamis or Tamia) , which considered rich in those nutrients. Meanwhile , the low nutrients mean intakes of the subjects under study could be ascribed to the wrong and imbalanced meals eaten or to low nutritional awareness of both mothers and adolescents.

Table 3: students' distribution (13-<15 years old) according to their sex, mean nutrients daily intakes and as % of RDA for nutrients.

Nutrients	Male		Female	
	Mean ±SD	%RDA	Mean ±SD	%RDA
Energy (Kcal)	1759.34±382.30	70.37	1730.96±545.27	78.68
Protein (g)	61.07±19.25	135.71	59.022±22.97	128.30
Vitamin A (µg RE)	1261.94±2246.33	126.19	757.02±2298.15	94.63
Vitamin D (mcg)	0.95±3.49	19.00	1.69±5.09	33.80
Vitamin E (TR)	3.426±1.33	34.26	3.184±1.811	39.80
Vitamin C (mg)	46.50±44.61	93.00	45.31±67.27	90.62
Thiamin (mg)	0.90±0.17	69.23	0.79±0.30	60.77
Riboflavin (mg)	1.16±0.68	77.33	0.99±0.58	90.00
Niacin (mg)	10.77±3.83	63.35	9.71±3.90	64.73
Folate(mg)	210.25±75.52	140.17	206.96±110.00	137.97
Vitamin B6 (mg)	0.99±0.22	49.50	0.93±0.33	66.43
Vitamin B12(mcg)	6.53±15.87	326.50	4.37±12.34	218.50
Calcium(mg)	414.97±282.01	31.92	406.55±320.66	31.27
Iron (mg)	7.79±2.69	64.92	7.48±3.29	49.87
Phosphorus (mg)	944.64±304.41	75.57	916.45±370.24	73.32
Zinc (mg)	7.78±2.39	51.86	7.49±3.09	62.42
Magnesium (mg)	224.51±59.30	93.55	225.47±88.02	93.95

Table 4: Students' distribution (15-17 years old) according to their sex, mean nutrients daily intakes and as % of RDA for nutrients.

Nutrients	Male		Female	
	Mean \pm SD	%RDA	Mean \pm SD	%RDA
Energy (Kcal)	1883.62 \pm 434.50	62.79	1616.35 \pm 466.50	73.47
Protein (g)	64.87 \pm 20.78	109.95	56.02 \pm 20.88	127.32
Vitamin A (μ g RE)	646.89 \pm 1579.16	64.69	845.58 \pm 2465.57	105.69
Vitamin D (mcg)	1.857 \pm 4.64	37.14	1.63 \pm 5.35	32.60
Vitamin E (TR)	3.77 \pm 1.59	37.7	3.93 \pm 1.89	49.13
Vitamin C (mg)	45.57 \pm 40.48	75.95	45.00 \pm 69.93	75.00
Thiamin (mg)	0.91 \pm 0.23	61.66	0.78 \pm 0.30	60.00
Riboflavin (mg)	1.11 \pm 0.51	61.7	1.01 \pm 0.61	91.82
Niacin (mg)	10.90 \pm 4.09	54.50	10.02 \pm 4.67	66.80
Folate(mg)	235.48 \pm 91.22	117.74	202.03 \pm 103.13	112.24
VitaminB6 (mg)	1.00 \pm 0.30	50.00	0.87 \pm 0.32	58.00
Vitamin B12(mcg)	3.56 \pm 8.5	178.00	4.67 \pm 13.56	233.50
Calcium(mg)	441.22 \pm 302.58	33.94	381.23 \pm 330.61	29.33
Iron (mg)	8.29 \pm 2.85	33.92	7.33 \pm 3.48	48.87
Phosphorus (mg)	1014.81 \pm 337.58	81.18	893.30 \pm 383.17	71.46
Zinc (mg)	8.29 \pm 2.85	55.27	7.21 \pm 3.09	60.08
Magnesium (mg)	252.53 \pm 74.88	1.59	223.83 \pm 95.32	62.18

Data in table (4) illustrated the students' distribution (male & female aged from 15 to 17 years old) according to their mean nutrients' intakes and as percentages of the recommended dietary allowances (NRC/FNB, 1989). Results showed similar trend with respect to the mean values of nutrient intakes as in the case of adolescents aged 13-<15 years old with some differences.

It could be concluded that the mean energy intakes for males under study were also lower than those of females. These could be attributed to the quality and quantity of female food intakes, which could be affected by their body composition. Moreover, data showed a severe deficiency of some important macro and micronutrients nutrients such as vitamins (D&E) and minerals (Ca, Iron and Zinc) among both adolescents. These could be attributed to their existing practices, or taking junk, snacks and/or their bad meals choices. According to National Nutrition Institute and UNICEF (2003) and WHO / UNICEF / IVACG, (2003), the important micronutrients were deficient in adolescents including vit A, Ca, zinc and iron. Calcium intake level among Egyptian adolescents is far below the recommended international figures for preventing osteoporosis. Their reports noted that nearly half (47%) of those adolescents suffer from anemia.

The obtained results are similar with those results carried out by Hassan et al (2006) who indicated that Egypt as developing country is facing the double burden of malnutrition. The changed consumption patterns of Egyptian population during last two decades can explain as reflecting changes in the socio-economic status, changes in eating habits, urbanization and globalization. The dietary changes that have occurred in Egypt were associated with increasing the proportion of energy dense foods and saturated fat but poor in vital vitamins and minerals.

The presented results in table(5) showed the percentages of frequent snacks and beverages consumed by the adolescents. It could be noticed that

the frequency percent of sandwiches consumption (filled with either cheese, bean cake (Taamia) or horse bean (Medamis)) were higher (93.83%) than those percentages of other items that consumed by the subjects under study. Meanwhile , (46.43%) of the subjects tended to eat koshary, which is consider a nutritious Egyptian traditional food made from some cereals , legumes and vegetables .

Among the adolescents , data demonstrated the widespread of consuming sandwiches, chipsey , candy , canned juices and carbonated soda. The consumption was higher for female adolescents than the same items by the males students .On the contrary , the male students recorded higher percentages of weekly consumption for koshary ,bakery products and pup corn than the females.

From these results , it could be concluded that both male and female adolescents tended to frequently eat snacks as fast foods with large amounts that could lead to some nutritional and healthy problems .

In this respect, *Patterson and Kendall, (2000)* found that , although teenagers often skip meals, adolescents as a group tended to eat frequently more than other groups .This is explained by the widespread habit of snacking .Consuming snacks can be a liability if the snacks are high in calories and low in nutrients and make up a large part of the diet .Snacks as synonymous with (junk foods) that will spoil the appetite for meals . In addition, *(A D A, 2004)* reported that , there are concerns about the effect of soft drink consumption increase leading to reducing micronutrient intakes and increasing energy intake as well as displacing the intake of more nutrient-rich option such as milk.

Table 5: students' distribution according to their frequent consumed weekly snacks and beverages.

Items	Males(n=152)		Females(n=156)		Total(n= 308)	
	No.	%	No.	%	No.	%
Sandwiches	140	92.11	149	95.51	289	93.83
Bakery product	142	93.42	139	89.10	271	87.99
Chipsy	135	88.81	142	91.03	275	89.29
Koshary	88	57.89	55	35.26	143	46.43
Candy	130	85.53	138	88.46	268	87.01
Pup corn	119	78.29	102	65.38	221	71.75
Canned juices	122	80.26	136	87.18	258	83.77
Carboneted soda	112	73.68	121	77.56	233	75.65

Data concerning weight , height and BMI for both male and female adolescents under study are illustrated in table (6) .With respect to mean weight values of males , all values exceeded those of standard measurements. Similar trend was noticed in the case of mean weight values of females except in female adolescents aged 13 years old. It could be noticed that increasing the mean weight values might be attributed to their improper food choices with high calories snacks as well as the consumption of carbonated beverages.

Regarding mean height values of males , the same table showed lower height values compared to the standard except those for the male

adolescents aged 14 years old. However mean values of female adolescents were higher than the standard measurements. On the other side , it could noted that increasing boys' weight might be due to their muscles' growing. The height values might be affected the state of nutrition and /or the heredity. With respect to the mean BMI values of males ,data showed higher values compared to the standard measurements. Comparing the females' BMI , it could be noticed that all BMI values showed higher values except those aging 17 years old which demonstrated slightly lower value. This could be attributed to that females at the beginning spurt stage might tend to reduce their weight and focus on the attention of their body image to follow fashion.

In this concern , *Farrag (2003)* noticed that many teenagers, especially girls were either fat , believed they were ,or were fearful of becoming fat. Because they often try to emulate fashion models, girls often aspire to an unrealistic and unhealthy body size. Thus , they embarked on self- directed programs of weight reduction that might be hazardous to health.

Table 6: Mean values± SE of weight , height and body mass index for males and females adolescents according to their age .

Adolescents	Anthropometric measurements					
	Males			Females		
	Mean	Mean	Mean	Mean	Mean	Mean BMI
	Weight ±SD	Height ±SD	BMI ±SD	Weight ±SD	Height ±SD	±SD
13	53.90 ±1.22	155.50 ±1.21	21.62±0.65	41.00±0.68	150.00±0.37	18.22±0.27
14	62.01 ±0.35	167.81±0.38	21.89±0.39	57.96±0.34	159.57±0.29	22.68±0.59
15	62.05 ±0.30	168.63 ±0.59	21.76±0.25	61.75±0.28	160.85±0.42	23.81±1.15
16	63.20 ±0.41	168.26±0.47	22.23±0.49	60.51±0.41	161.06±1.32	23.32±0.19
17	66.72 ±1.33	172.05±0.58	22.48±0.302	60.00±1.01	162.01±1.03	22.86±0.13

The obtained results in table (7) showed that according to BMI ,the male subjects recorded the highest percent of underweight (42.8%) among the weight catalogues, following it normal weight percent. Meanwhile the results revealed that the normal BMI of adolescents, females showed the highest percent. Similar trends were observed in the case of both at risk of overweight and overweight for males and females as lower percentages were noticed. It could be concluded that boys' underweight was more prevalent than the studied girls, while the females were more overweight than boys. These might be attributed to the intensive growth period of female adolescents as well as their high socioeconomic status .

Table 7: Percent students' distribution according to their body mass index (BMI).

BMI	Underweight (<5 th - < 25 th)		Normal (25 th -< 5 th)		At risk of overweight ≥ 85 th -< 95 th		Overweight ≥ 95 th		Total	
	No	%	No	%	No	%	No	%	No	%
Males	65	42.8	55	36.2	23	15.1	9	5.9	152	49.4
Females	39	25.0	65	41.7	40	25.6	12	7.7	156	50.6
Total	104	33.9	120	38.9	63	20.5	21	6.8	308	100

Meanwhile , the high percentages of under- weight BMI of males might be attributed to their irregular meal pattern and food choice as well as the high consumption of snacks and their continuous activities outdoors.

The presented results in table (8) demonstrated the relationships between body mass index (BMI) and some socioeconomic characteristics . It could be noticed that the highest percentages of fathers having different education levels were noticed for under weight, normal, and overweight cases ,being (67.3%, 69.9% and 52.4% of studied subjects respectively). However fathers with medium education showed higher percentage of overweight adolescents (33.3%) .

Table 8: Relationship between body mass index and socioeconomic characteristics .

Items	BMI						Total	(chi)2 test	
	Underweig ht (n=104)		Normal (n=183)		Obese (n=21)				
	No	%	No	%	No	%			
Fathers' Education level:									
Low education	9	8.7	17	9.3	3	14.3	29	9.4	4.29*
Medium education	25	24.0	38	20.8	7	33.3	70	22.7	
High education	70	67.3	128	69.9	11	52.4	209	67.9	
Mothers' Educational level:									
Low education	16	15.4	29	15.8	4	19.1	49	15.9	3.05*
Medium education	39	37.5	74	40.5	7	33.3	10	39.0	
High education	49	47.1	80	43.7	10	47.6	139	45.1	
Family size (persons):									
Up to 4	26	25.0	36	19.7	5	23.8	67	21.8	9.41*
5-6	71	68.3	134	73.2	15	71.4	220	71.4	
7& more	7	6.7	13	7.1	1	4.8	21	6.8	
Family income (L E) :									
300- 700	30	28.9	54	29.5	9	42.9	93	30.2	4.93*
> 700- 1500	56	53.8	98	53.6	10	47.6	164	53.3	
> 1500	18	17.3	31	16.9	2	9.5	51	16.5	

Meanwhile, the adolescents having mothers with high education recorded the highest values of under , normal and overweight BMI (47.1% , 43.7% and 47.6 % , respectively) following them the percent of students having different BMI whom mother their education was medium. In the case of low mothers' education, the students showed the lowest percent of students (19.1%).

Concerning family size, the highest percentages of underweight, normal, overweight were observed in students who their family had 5-6 persons. However, the families over 7 persons showed the lowest percentages of students having overweight.

With respect to family income, the highest percentages of underweight, normal, and overweight were observed for students with families' income in the range of > 700- 1500 LE. However, the percentage of students with families' income of more than > 1500 LE. The percentages showed the lowest values of students having families with income ranging between 300-

700 LE. These results are in agreement with the findings of *Ahmed (2000)* who found that the obesity was more prevalent among low&middle class than the high class families.

Chi- square test revealed that there were significant relations between BMI and each of fathers'& mothers' education, family size and family income . *Hassan et al (2007)* mentioned that there were significant relations between BMI and each of fathers' education, mothers' education, family size and family income.

Yetes correction was done

Data in table (9) revealed significant correlations between BMI and each of calories, fat, proteins and carbohydrates intakes ($\leq P 0.05$).

Increasing the intakes of nutrients yielding calorie increased the value of BMI. These results agree with the findings of *Garaulet et al., (2000)* who observed associations between overweight and each of nutrient intake and activity level. In this respect *Hassan et al (2007)* found significant correlations between BMI and each of calories, fat, proteins and carbohydrates intakes. However, *Li and Wang (2008)* observed that adolescents who tracked high intakes of energy , fiber, fried food and snacks were less likely to track high BMI . Decreased energy and snack intakes were negatively related to tracking of high BMI.

Table 9: Correlation coefficients between body mass index (BMI) and macronutrient intake .

Variables	Correlation coefficients	Significant level
K cal intake	0.080	0.021*
Fat intake	0.114	0.023*
Protein intake	0.127	0.013*
Carbohydrates intake	0.012	0.012*

*significant at $\leq P 0.05$

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الحالة الغذائية والخصائص الاجتماعية و الاقتصادية للمراهقين في بعض مدارس محافظة الجيزة

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استهدفت هذه الدراسة تقييم الحالة الغذائية والتمتدول الؤومى من المغذيات للمراهقين من بعض تلامذ المدارس الثانوى بمحافظة الجيزة وتراوحت أعمارهم من ١٣-١٧ سنة , حيث بلغ أجمالى العينة ٣٠٨ طالبا وطالبه (١٥٢ طالبا و ١٥٦ طالبة) , وقد تم إختيارهم عشوائيا من خمس مدارس حكومية مختلفة تنتمى إلى مستويات اجتماعيه مختلفة , وتم اخذ القياسات الجسميه المختلفة والتمتدول الؤومى وتقدير الخصائص لإجتماعيه و إاقتصاديه للأسرة كما تم حساب معامل كتلة الجسم.

ويمكن إيجاز أهم النتائج فيما يلي:

- أن اغلب الأباء من خريجين الجامعات (٦٧.٩%) بينما نسبة الأمهات الخريجات كانت ٤٥.١% ونسبه عالية من أباء الفتيات كانوا موظفين (٧٠.٥%) بينما كانت نسبة الموظفين من أباء الفتيان (٨.٥%) في حين كان أكثر من ٥٠% من أمهات الفتيان من ربات المنازل حيث كانت أعلى من نسبة أمهات الفتيات و كذلك توضح النتائج أن نسبة عالية من الأسر تتكون من ٧-٥ أفراد.
 - وقد وجد إن متوسط المتمدول الؤومى من الطاقة اقل من الكميات الموصى بها كذلك متوسط المتمدول الؤومى من بعض الفيتامينات كان منخفضا خاصة بالنسبة لكل من فيتامين أ , د , هـ , ب٦ , ب١٢ و كذلك المتمدول الؤومى من الكالسيوم و الحديد و الزنك .
 - أظهرت النتائج أن أكثر من ٩٣.٨٣% من العينة تناولوا السندوتشات مقارنة بالأصناف الأخرى بينما بلغت نسبة المتمدول من الكشري ٦.٤٣% .
 - كما تبين من خلال التكرار الوصفى للعينة حيث تبين أن نسبة كبيرة من الفتيان لديهم نقص في الوزن (٤٢.٨%) و كانت النسبة في الفتيات (٢٥%) .
 - هناك علاقة معنوية بين معامل كتلة الجسم وكل من تعليم الأب وتعليم الأم و حجم الأسرة ودخل الأسرة.
- وقد وجدت علاقات معنوية بين معامل كتله الجسم والمتمدول لكل من الطاقة والدهون والبروتين و الكربوهيدرات .