STUDIES ON SOME FOOD PATTERNS IN THE EGYPTIAN RURAL AND URBAN AREAS

Waheby, Rania Y.A., S.M. Abu El- Maaty, A.H. Guirguis, and Manal Shehata

Food Science Dept., Faculty of Agriculture, Zagazig University, Egypt.

ABSTRACT: A cross sectional study of adolescent's food patterns in rural areas in Sharkia Governorate was carried out. Two-hundred adolescent from both sexes from second year of preparatory grade; aged from 13 – 14 years old were invested. Nutritional intake and some of their nutritional habits; either healthy and unhealthy food patterns in rural and urban areas in some of Sharkia Governorate educational zones were examined on all participants. There were significant correlation (P<0.05) between father's educational level and some nutritional habits. As regard to hand washing before and after meals in relation to father's education level; it was found that average educational father's paid more attention toward this healthy habit followed by high educational fathers (37% and 27%) respectively. Also the degree of daily milk drinking had a significant correlation with father's educational level (P < 0.05) with 0.028. But for milk drinking it was clear that medium educational father's affected at the majority percent of this pattern (18.5% as sometimes and 15.5% as yes for an answer).

According to mother's educational level and food patterns, breakfast meal was eaten regularly by 10% of subjects which their mother had an average educational level followed by essential education mothers in a near percentage (9.5%). While mother's subjects who missed the breakfast meal were (17.5%) with average education. At P < 0.001 there were a high significant differences between mother's educational level and having a healthy nutritional habits.

Also there was a percent distribution for the samples according to some healthy nutritional habits like having breakfast daily. In

general, our results revealed that 43.5% of subjects were skipping breakfast meal followed by 30% for a regular breakfast eating pattern. Finally those which eat breakfast meal in irregular way were represented 26.5% of total.

Daily milk drinking, salad eating as a healthy food patterns; In addition to that unhealthy food patterns like tea drinking, pickles eating and the degree of eating fast food like chips were also studied.

Key words: Adolescents nutritional status, healthy and unhealthy food patterns.

INTRODUCTION

Nutrition is one of the important factors that affect human health, besides it helps his growth, physical ability and intellectual achievement particularly in his early life. It is also important for sound social behavior. Hence, it plays a big role in the development of the community.

Mc Williams (1986), identified adolescent period as a time of a significant changes, both physically and psychologically. The physical changes of sexual maturation are accompanied by impressive growth, particularly in some boys, necessitating a careful examination of nutritional needs and the selection of food to provide needed nutrients. At the same time, physiological and social pressures begin to influence food behaviors. From the period of

latency, young people emerge into a time when they have high nutritional needs and increasing in deciding how to meet those demands. No wonder this stage of development viewed with both amazement and concern by adolescents and parents alike. Also it was said that adolescents are viewed by psychologists and nutritionists in different ways, yet they find certain similarities. Psychologists identify this period as a time when the individual is attempting to develop an understanding of him and find a way of relating to the adult world. The nutritionist views this period also as a time for significant growth in a physical sense. Adults tend to be concerned about the adolescent period because behavior patterns as this age are often different from any other time in life. The teenager period

frequently being considerable concern with appearance and desire for a high degree of conformity to the peer group. These tow aspects of development may manifest themselves in nutritional problems for a number of adolescents. An understanding family can be helpful in continuing dietary patterns or in establishing good nutritional habits when poor ones existed.

Abd El-Wahab (1990), discovered that inadequate intake of nutrients continues to be a major problem affecting more than one-third of the word's population.

Kimiagar *et al* (1998), proved that food patterns have got a lot of relation with a lot of things like its relation to heart disease and dietetic risk factors. Nationwide data collected in recent surveys (in 1990 – 95) were analyzed. The findings reveal plant foods to be the basis of the Iranian diet.

Osler and Heitmann (1998), determined some examined meal patterns and used food intakes. Calcium's intake was important in this period. Milk, cheese, and oat meals were the major sources for Ca.

Edmunds and Hill (1999), added that food patterns also have got its relation with the body itself, dieting eating patterns, food related nurture and parental control of eating, together with body weight, height, and self-perception.

Hussein (1991), showed that family budget is also has a big role in food patterns. Quantity of food consumed, calories, and essential food nutrient.

Fitz (2001), found that consumers are interested in new approaches they can use to change their life style and food patterns, that change their life style and food patterns, which change needs skills like knowledge for food practices.

Zaky (2001), stated that adolescence period is the transitory stage from childhood to adulthood. This period is accompanied by series of physical, physiological, biochemical, hormonal and psychological changes. That's why this period requires high demand for energy and nutrients.

Smikilas-Wright *et al.* (2002), reviewed applied methods for assessing adult intakes are reviewed, with emphasis on methodological validity. These methods include food recall, food frequency questionnaires, and dietary history. Current issues on food pattern analysis, dietary

supplements and functional foods were also discussed.

Abu-Taleb (2003), revealed that during some months like Ramadan it is founded that the family consumption takes another leap; not like other year's months. This gives a clue that also time has his changes in food patterns.

Shabayek and Saleh (2005) reported that adolescence is a period of drastic growth and development, as the child evolves into an adult. He is subjected to the turbulent changes both physically and psychologically. An increase in nutritional requirements is essential to meet high growth velocity during adolescence. Shortage in dietary supply, whether quality, will have a negative effect on normal growth.

The aims of this study were:

1. Assessment of nutrient intake from food consumption data collected by the "24 Hour Recall Method"; and comparing the dietary intake to the DRI. "Dietary Reference Intake".

2. Identifying any nutritional problem between the studied students.

3. Suggesting the necessary advices to improv the nutritional status of this group category of students.

MATERIALS AND METHODS

The studied samples were student teenagers boys and girls aged between 13-14 years. They were selected from the second class of the preparatory period, in Sharkia Governorate.

The total randomly student samples were 200 students divided as follows:

- 138 students' samples from school in rural areas sorted as 71 boys and 67 girls.

- 62 students' samples from urban areas as 31 boys and 31 girls.

Data were collected during the school years 2005-2006 and 2006-2007.

Nutritional Assessment

This includes dietary intake and analyzing the dietary survey food preferences pattern practices.

Social survey

It included the following aspects:

a) Data related to family features:

1. Size of the family.

2. Type of the family.

3. Income source.

b) Data related to the parents:

1. Parent's education.

2. Parent's occupation.

3. Mother's information source.

c)Data related to the sample it self:

1. Age.

2. Gender.

3. Samples rank in the family.

4. Food habits.

Dietary survey

It included the following aspects:

1. Twenty-four hour recall method.

2. Food frequency.

A predestined dietary form was used to determine food intake by using 24- hour recall for three days. It gave an idea about pattern of food consumption in rural and urban communities.

Each student was asked to recall every thing that he or she consumed, including food obtained away from home and quantities eaten. Then calculated the nutrive value of the intake using the Food Composition Tables for Egypt, Nutrition Institute A.R.E. (1996). These actual values for protein, fat, calories, iron and calcium were compared with the Dietary Reference Intake (DRI) of these age range (Nutrition, 2004).

In addition, an interview was done with some of the adolescent's mothers to confirm the dietary information and more knowledge about ingredients of the common dishes.

To help in visualizing quantities, boys and girls were provided with common measuring cups, spoons and plates.

Statistical Analysis

The data were statically analyzed by analysis of variance (Chi^2 test, T-test) and Descriptive statistics (mean–stander deviations – range – minimum – maximum – correlation coefficient) and frequencies.

RESULTS AND DISCUSSION

Some Healthy Nutritional Habits

Figure 1 represents the frequency and percent distribution of school age children according to their age, sector and gender in relation to the degree of daily breakfast eaten.

As for rural areas it was found that 14 years old males had 13% for skipping breakfast at all, followed by 8.5% for 14 years old females. But those who eat breakfast every day; 14 years old males took the lead by 6% then 13

years old females with 5.5%. As for sometimes for a choice it was found that 18% of the total rural samples made that choice as 6% for 13 years old males also 14 years old females, followed by 3% for 14 years old and finally 2% for 13 years old females.

The majority of urban areas were 5% for skipping breakfast (it was found in 13 years old males) followed by 4.5% in 14 years old females but it was for eating breakfast every day. Sometimes as a percent took a position by 4% as the highest percent for that choice.

Generally not having breakfast at all was represented by 43.5% then 30% for a regular breakfast pattern. Finally those which eat breakfast meal but not every day took 26.5% which did not match with Saleh (2004); but it matched to Baric and Satalic (2003).

A crystal clear idea was given in figure 2 that most of the adolescents may drink milk but not every day in a regular pattern, it has 52% of the total.

Rural sample groups had the largest percentage for not regular milk drinking as 13% in 14 years old males, then 8%, 7%, 6.5% respectively for 14 years old females, males 13 years old group and finally 13 years old females.

For a daily milk drinking the percents were found as the following order 3.5%, 3%, 2.5% and 1% for 14 years old females, then 13 years old males after that also males but 14 years old group, and at the end of this order their 13 years old females. 14 years old females recorded the highest percent for not drinking milk at all with 8% from the total subjects.

As for urban areas drinking milk every day; only 14 years old females had 1.5% who voted for this choice. In the opposite of this case; never milk drinking, it was found that also females had the lead in 4.5% for 13 years old group then 14 years old with 3.5%. Males got the largest percentage in choosing sometimes as an answer for regulatory milk drinking degree, it was 6.5% for males 13 years old samples followed by the same age group but at 14 years old in 5%.

Figure 3 shows frequency and percent distribution of school age children according to their age, sector and gender in relation to the degree of daily salad eaten in meals. The results revealed that in rural areas the highest percentage for eating salad was (14.5%) for females 14 years old followed by 10% for females 13 years old and at the last 14 years old males in 7.5%.
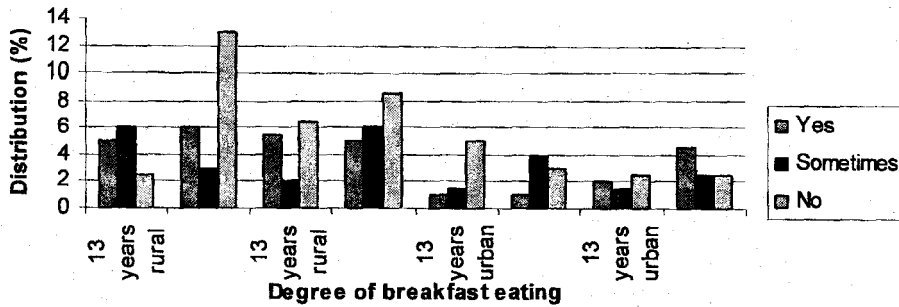
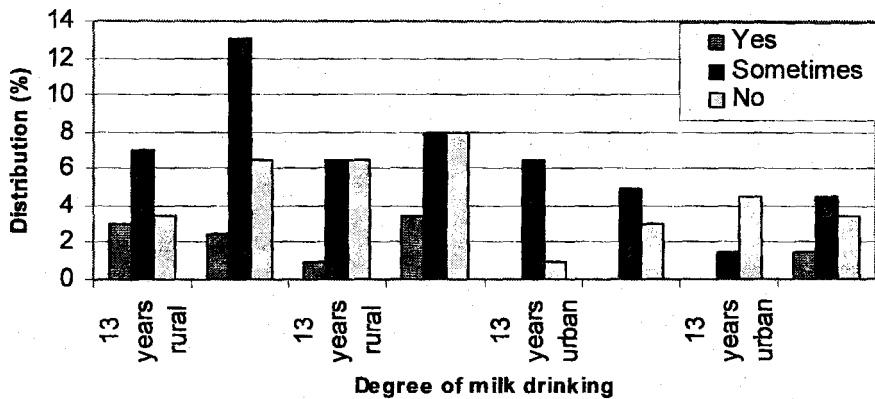**Fig.1.Distribution of daily breakfast eating degree**

Fig.2. Distribution of samples according to degree of daily milk drinking
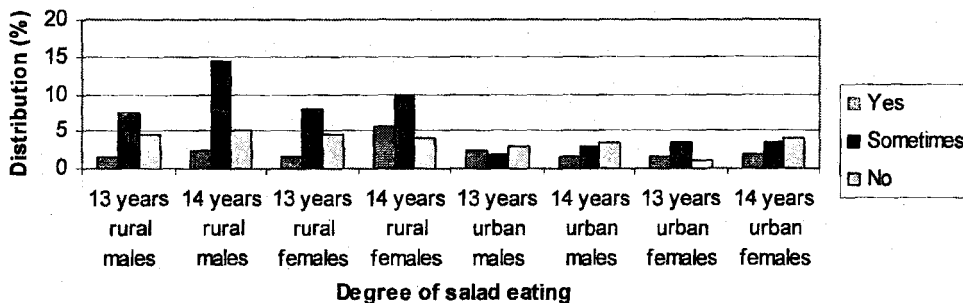

Fig.3. Distribution of samples according to salad eating

Answering as no for daily salad eaten gave a medium indicator; the highest percentage was 5% for males14 years old. Yes as a choice for eating salad every day did not give more than 5.5% for 14 years old females as the highest percent of the total samples.

Urban areas it was showed that the majority those who do not eat salad were from 14 years old females (with 4% as a percent), followed by eating salad sometimes especially girls; both 13 and 14 years old in a similar percentage 3.5%.

No for an answer took about 7.5% of total urban sample.

Some Unhealthy Nutritional Habits

Figure 4 demonstrate the frequency and percent distribution of school age children according to their age, sector and gender in relation to the degree of tea drinking. The majority of 13 years old rural males drink tea regularly (15%) followed by 14 years old females with 13%. The less group in rural those who did not like to drink tea daily; was a similar percentage in each 13 years old males and females; 13 and 14 years old, it was 1.5% respectively.

As for urban areas, it was noticed that all 13 years old males liked daily tea drinking (7.5%), so did 13 years old females (6%). As the majority of 14 years old , drink tea every day (9%) except one case only (0.5%) did not prefer to drink tea, so did 1% in 14 years males group. Only 2.5% of urban samples voted for sometime as a choice; it was found in 14 years old group.

Also Figure 5 gave a clear idea about the percentage distribution of samples according to the degree of pickles eating with meals.

Most of the rural area groups prefer pickles with meals. The highest percentage were for 14 years old females (13%) followed by 11.5% for 14 years old males, then a similar percent in both 13 years old group; males and females (9.5%). The largest percent for not eating pickles was 1.5% for 14 years old females. About 17% of rural samples eat pickles but not always. 14 years old males and females took 5% for each followed by a similar percentage as 3.5% for 13 years old in both sex.

As for urban samples similar percents were found for regular pickles eating as shown in Figure 5; 5%, 5% and 5% as males (13

and 14 years old) also 14 years old females respectively. But the highest percent in rural areas for not eating pickles was found in 14 years old females (1.5%). About 11.5% of rural samples not always do eat pickles.

Figure 6 shows the percentage distribution of both sex according to their age, sector and gender in relation to the degree of preferring to eat fast food like chips.

It was noted that rural areas gave priority for eating fast food; 14 years old had the highest percent by 15.5% of do preferring fast food followed by the same age group but from female's gender with 13.5%. Those who do not prefer fast food it was revealed that 14 years old rural females took the lead of them with 2.5% of total. As for sometimes as an answer it was found that it took about 14% as 5.5%, 3.5%, 3.5% and 1.5% for 14 years old males followed by 13 years old of both males and females in a similar percentage and finally 14 years old females respectively.

In urban areas the highest percentage was from 14 years old males (7%) share as do prefers to eat fast food. In general way 23% of urban areas had preferred fast food against of 0.5% who did not

prefer to eat fast food (it was found in 13 years old females). The rest 5.5% of urban samples agreed on that they do not like to eat fast food all the time. Aranceta *et al* (2003) agreed with our results; but it was most for bakery products like cake and biscuits, also soft drinks and salted snacks.

Correlation Between Some Nutritional Habits and Parent's Education Level

Healthy eating habits could be developed during adolescent's period. However external pressures can influence adolescents to choose foods. Adolescents generally become more independent and mobile during this life stage (Samuelson *et al.*, 2002).

As Table 1 refers to regularly of hand washing and it's relation to father's education level; it was found a significant relation at $P< 0.05$. It was clear that average education fathers paid more attention to educate about hand washing importance. But as milk drinking degree also medium education fathers did have the majority percent of that habit (18.5% as sometimes and 15.5% for yes as an answer).Ebrahim (1999) proved that father's educational level had a great effect on his children food pattern.

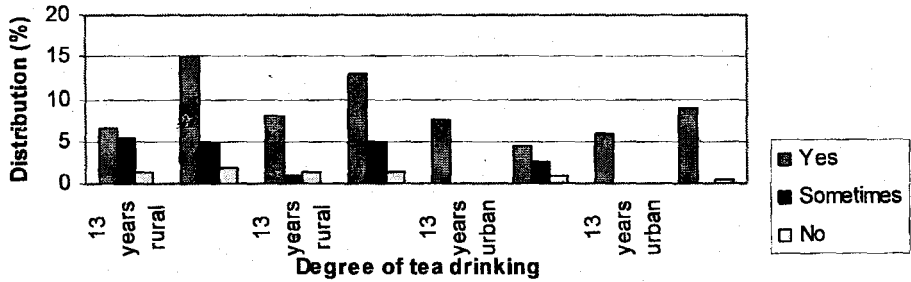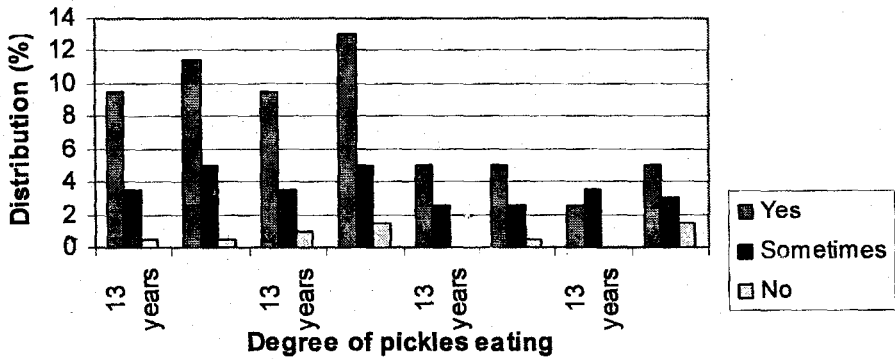**Fig.4. Distribution of samples according to the degree of tea drinking**

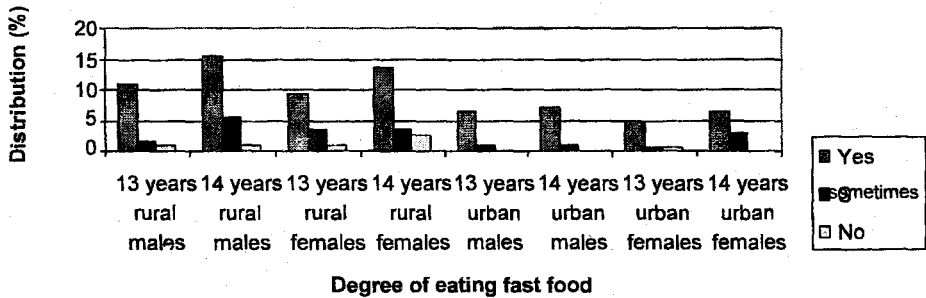**Fig.5. Distribution of samples according to eating pickles with meals**

Fig.6. Distribution of samples according to eating fast food like chips

Table 1. Correlations with parent's educational level and some nutritional habits

Items	Illiterate		Nominating degree		Essential education		Average education		High education		dr	X²	p
	No	%	No	%	No	%	No	%	No	%			
FATHER'S EDUCATIONAL LEVEL													
1- Regularly of hand washing													
• Sometimes	1	0.5	0	0	9	4.5	6	3	6	3	4	7.59	0.040*
• Yes	8	4	14	7	27	13.5	74	37	55	27.5			
2- Degree of milk drinking													
○ No	1	0.5	3	1.5	15	7.5	31	15.5	23	11.5	8	12.34	0.028*
• Sometimes	7	3.5	6	3	18	9	37	18.5	36	18			
• Yes	1	0.5	5	2.5	3	1.5	12	6	2	1			
MOTHER'S EDUCATION LEVEL													
1- Degree of regularly of breakfast eating													
• No	17	8.5	7	3.5	12	6	35	17.5	16	8	8	11.99	0.059*
• Sometimes	2	1	5	2.5	18	9	19	9.5	9	4.5			
• Yes	7	3.5	3	1.5	19	9.5	20	10	11	5.5			
2- Degree of having healthy nutritional habits													
•<11 degree	10	5	2	1	6	3	9	4.5	10	5	8	17.74	0.006**
•11-13 degree	9	4.5	5	2.5	33	16.5	47	23.5	16	8			
•≥14 degree	7	3.5	8	4	10	5	18	9	10	5			

X²: Chi-square value   dr: Degree of freedom

*: Significant at P< 0.05   **: High significant at P< 0.001

Waheby, et al.

Mother's education had a significant correlation with breakfast eating at P< 0.05 and it was obvious that average educational mothers with 10% of total samples always eat breakfast every day. Finally at P< 0.001 there were a high significant relation between degree of having healthy nutritional habits and mother's education and these results are agree with El- Sayed *et al.* (2000), Galal (1985) and Awad (1995).

Correlation Coefficient between Age and Dietary Intake for Adolescents

Data presented in Table 2 illustrate that, there were a very high significant correlation at P < 0.001 between age and calories, total protein, carbohydrate, calcium and total iron. The obtained results gave an idea that 13 years old males had shortage in the daily taken of calories and calcium sources. It was also found that they took normal amounts of iron and carbohydrates; but more than needed was taken of protein sources. As for 14 years old group it were the similar situation as 13 years old group.

Data on Table 3 showed that, there were a very high significant correlation at P < 0.001 between age and calories, total protein, carbohydrate, calcium and total iron. The eaten amounts did not be enough to cover the daily needs of calcium for both ages and total iron for 14 years old girls. Generally the taken calories were not enough for both groups.

Shabayek (2005) reported that iron intake in girls were below the recommended also energy intake in both gender; so did Zaky (2001).Nawar (1974) matched with low calcium intake in both groups.

Table 2. Mean and SD of Dietary Intake of Nutrient Elements as% of DRI for Boys

NUTRIENTS	Age				T 1	T 2	P 1	P 2
	13 Years old		14 Years old					
	Mean	±SD	Mean	±SD				
•Calories (Kcal)	1805.5	469.1	1708.03	505.18	-7.37	-10.15	0.000***	0.000***
•Total protein (gm)	109.8	29.94	105.010	34.189	16.41	12.010	0.000***	0.000***
•Carbohydrate (gm)	325.17	76.21	314.223	86.13	16.59	16.568	0.000***	0.000***
•Calcium (mg)	572.8	238.8	511.933	222.78	-19.8	-27.40	0.000***	0.000***
•Total iron (mg)	23.42	8.102	24.60	10.58	12.33	9.98	0.000***	0.000***

Table 3. Mean and SD of Dietary Intake of Nutrient Elements as %
of DRI for Girls

| NUTRIENTS | Age | | | | T 1 | T 2 | P 1 | P 2 |
| | 13 Years old | | 14 Years old | | | | | |
	Mean	±SD	Mean	±SD				
•Calories (Kcal)	1655.2	467.9	1788.1	564.98	-5.20	-3.396	0.000***	0.000***
•Total protein (gm)	107.35	38.58	109.7	35.13	12.0	13.871	0.000***	0.000***
•Carbohydrate (gm)	323.28	1.8.4	337.9	101.00	11.2	15.678	0.000***	0.000***
•Calcium (mg)	546.49	211.5	578.8	277.30	-22.5	-19.56	0.000***	0.000***
•Total iron (mg)	22.67	8.85	26.15	14.020	10.4	6.057-	0.000***	0.000***

T 1: T- test for 13 years old   T 2: T- test for 14 years old

***: Very high significant at P< 0.0001

REFERENCES

Abd El-Wahab, M. 1990. Food Patterns of Children in the Equatorial Region. Nutrition Res. (11) 41 -52.

Awad, Violet, S. 1995. Assessment of Nutritional Status and Some Socio-Economic and Health Factors for Teenager Students.

Aranceta, J., C. Perez- Rodrigo, L. Ribas and L. Serra- Majem. 2003. Sociodemegographic and Lifestyle Determinants of Food Patterns in Spanish Children and Adolescents: The enkid study. 5th Congress of the Spanish Society of Community

Ms. Sc. Thesis, Faculty of Home Economics, Minufia University.

Abu- Taleb, N.S. 2003. The Influence of the Patterns of Consumption during Ramadan on a Family's Budget. [Arabic]. Alexandria J. of Agric. Res. Faculty of Agriculture, university of Alexandria, Egypt, (48) 3- 35. Nutrition (SENC), 26-29 September 2002, Madrid, Spain. European J. of Clinical Nutrition. (57) supplement 1, pp 40- 44.

Baric, I.C. and Z. Satalic. 2003. Breakfast Food Patterns among Urban and Rural Croatian

School Children. Nutrition and Health. (17) 1, pp 29 – 41.

Ebrahim, Thanaa. A.1999. Factors Affecting Malnutrition among Children in Rural Areas of El-Minufiya Governorate. Ms. Sc. Thesis, Faculty of Home economics, Minufia University.

Edmunds and Hill, A.J.1999. Dieting and the Family Context of Eating in Young Adolescent Children. International Journal of Eating Disorders. 25: (4) 435 – 440.

El-Sayed, N., A. Gad, L. Nofal, H.A. Zeid, H. El-Morshedy and S. El-Waseef. 2000. Assessment of the Prevalence and Potential Determinant of Nutrition Anemia in Upper Egypt. Food and Nutrition Bulletin. 21 (4), 417-421.

Galal, Fatma, S. 1985. The Effect of Nutritional Status on Mental Development of Primary School Children. Ph.D. Thesis, Faculty of Agriculture (Rural Home Economics). Cairo University.

Fitz, P.A. 2001. Go for Goals: Opportunities in the Food and Nutrition Enterprise. Topics in Clinical Nutrition. (16): 3, 1-7.

Hussein, Y.A. 1991. Comparative Economic Study of the Development in Food

Consumption Patterns and Expenditure between Urban and Rural Populations in Egypt. [Arabic] . Assiut j. of Agric. Sciences. 22: (2), 211- 117.

Kimiagar, S.M., M. Ghaffarpour, A. Houshiar, Rad, H. Hormozdyari and L. Zellipour. 1998. Food Consumption Pattern in the Islamic Republic of Iran and its Relation to Coronary Heart Disease. Eastern Mediterranean Health J. 4: (3), 539- 547.

Mc. William, M. 1986. Nutrition of the Growing Years. 4th Edition Momillan Pub. New York, 275-309.

Nawar, I.A. 1974. Patterns of Food Consumption and Quality of Diets of Individuals in an Egyptian Village. Alexandria J.of Agric. Res. 22: (1), 13-21.

Nutritional Institute A.R.E. 1996. Food Consumption Tables for Egypt. First Edition.

Osler, M. and Heitmann, B.L. 1998. Food Patterns, Flour Fortification and Intakes of Calcium and Vitamin D: A longitudinal Study of Danish Adults. Food Quality and Preference.6 (8), 368- 375.

Samuelson, G; Walter, P and verela, miseries – G. 2002.

Dietary habits and nutritional status in adolescents Over Europe, An overview of current studies in the Nordic countries. European J. of Clinical Nutrition. (54) Supplement. 1, 21 –28.

Smicikals-Wright, H., C.D. Mitchell, J.H. Ledikwe and C.D. Berdanier. 2002. Dietary ntake Assessment; Methods for Adults. Handbook of Nutrition and Food. 477-493.

Saleh, Ekbal, M. 2004. Impact of Food Habits and Nutritional Behaviors of the Children and Young Adolescents on the Nutrition Status. Egyptian J. of Nutrition. XIX, (2): 177-198.

Shabayek, Magda, M. and I. Saleh, Sanaa. 2005. Dietary pattern and nutritional assessment of Alexandria teenagers. Egyptian J. of Nutrition, 20 (4):105-130.

Zaky, M. 2001. Assassination the Nutrient Statue to Preparatory School Children (11-14 years) in Monufia Governorate in Rural and Urban .M.Sc. Thesis, Faculty of Home Economics, Minufiya University.

دراسات لبعض الأنماط الغذائية فى الريف والحضر المصرى

رانيا وهيبى يوسف أبوالعز– سامى محمد أبو المعاطى–

عــاطـف حلمــى جرجس– منــــال شحــاتـــه

قسم علوم الأغذية – كلية الزراعة – جامعة الزقازيق.

تعد مرحلة المراهقة من المراحل الهامة فى حياة الانسان والتى يهتم بها كلا من المراهق و الوالدين على حد سواء. من هذا المنطلق تم اجراء دراسة ميدانية على ٢٠٠ طالب للتعرف على الحالة الغذائية لعينة عشوائية من المراهقين فى الريف المصرى من مختلف المناطق التعليمية لمحافظة الشرقية على أساس مقارنة متوسط المأخوذ من العناصر الغذائية مع المقننات القياسية العالمية والتى يفترض بهم الحصول عليها بشكل يومى. كذلك تمت دراسة بعض العادات الغذائية الصحية و غير الصحية على حد سواء، وحساب مجموع اتباع العادات الغذائية الصحية على أساس المجموعات العمرية المختلفة لكلا الجنسين.

وقد وجدت علاقة معنوية بين مستوى تعليم الأب وبعض العادات الغذائية؛ فقد وجد أن الآباء متوسطى التعليم أشد اهتماما بعادة غسل الأيدى قبل وبعد الطعام يليهم الآباء ذوى التعليم العالى (بنسبة ٣٧% يليها ٢٧% على التوالى). كذلك توجد علاقة معنوية بين شرب اللبن و درجة تعليم الأب؛ فقد وجد أن هم غالبية المهتمين بهذه العادة الغذائية (١٨,٥% أبناؤهم يشربون للبن أحيانا و١٥,٥% أبناؤهم يشربون اللبن بانتظام).

بالنسبة لتعليم الأم فقد أثبتت النتائج وجود علاقة معنوية مع انتظام تناول وجبة الإفطار، عموما عند اجراء احصاء لعادة تناول الأفطار مثلا وجد أن ٤٣,٥% لا يتناولون هذه الوجبة مقارنة بحوالى ٣٠% فقط يواظبون على تناول الافطار بانتظام .كذلك وجد مستوى معنوية عالى بين تعليم الأم و درجة اتباع العادات الغذائية الصحية.

هذا وقد تم تحديد الارتباطات المعنوية بين بعض العادات الغذائية الصحية وغير الصحية وبعض العناصر مثل مستويات تعليم الوالدين، مصدر الدخل، مصادر معلومات الأم، الوزن، محل الاقامة و وظيفة الوالدين.