

RELATIONSHIP BETWEEN FOOD INTAKE AND BODY MASS INDEX AND LIPID PROFILE FOR SOME DORMITORY STUDENTS AT MINUF- CITY MINUFIYA UNIVERSITY

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ABSTRACT

In the present study ,body mass index (BMI),serum lipid profile,e.g.,total cholesterol (TC) , triglycerides (TGs), high density lipoproteins cholesterol (HDL-C) , and low density lipoproteins cholesterol (LDL-C) were determined in serum of some university students lived in Minuf dormitory students. Minufiya university in order to evaluate the relationship between the above mentioned components and their food intake .The students either male or female were divided into two groups A and B. The results revealed that the average age for the sample under study was (21.0 ± 1.91 , 20.64 ± 1.69 years) for males group A,B and (20.80 ± 2.30, 20.92 ± 2.40years) for females group A,B respectively.The mean height was(173.11±8.05, 173.82±8.34 cm) and (160.30± 5.85, 158.85 ± 5.23 cm) for both male and female group A,B respectively. Which was about 97.80, 98.20 % and 97.74, 96.86% of standard.The results indicated also that the average weight of males and females group A,B representing 112.01, 130.93 % and 118.97, 143.64% of standard . The mean of energy intakes for male recorded 4074.89 ± 304.20, 4287.11 ± 483.13 kcal and while it was 2788.29 ± 513.47, 3290.73 ± 384.31 kcal for female students group A,B respectively. Energy intakes for all groups were higher compared with (RDA,1989).With respect to biochemical measurements of serum (TC), (TG) and (LDL-C) were highly increased in females than those males, while HDL-C were higher in males than females .The results exhibited that female students may be subjected to the risk of atherosclerotic and coronary heart diseases (CHD) because of a high values of serum TC, TG and LDL-C than male students. The study recommended that the dietary modification and balance of diets must be taken into consideration. Regarding obese reduction of their energy intake with simultaneous promotion of physical activities and avoidance of sedentary life must be taken place for improving nutrition and health status of both male and female students .

INTRODUCTION

Youth are one of the important groups in society. Young youth is the first stage of adulthood as it comes after adolescence. They are characterized by years of stress, activity, vitality and fulfillment. These are years of building one's career and establishing one's own home (Abd-El Hady, 1997). Because of the period of education is considered critical the evaluation of diet in young youth is significant. in the development of desirable life style habits of importance for future health (Steptoe *et al.*, 2002).

Although most students know that excessive consumption of fat, sugar and salt increases one's risk for specific health problems, such as heart disease and high blood pressure, most students cannot choose between

common foods on the basis of their fat, sugar, salt or fiber content. The eating habits of many students appear to include frequent consumption of fried foods as well as snacks that are high in salt and sugar. Surveys revealed that the food habits of students are often not similar to their knowledge about nutrition (Anon, 1989).

Nutritional assessment is used to define nutritional status at a particular time; evaluate the adequacy of recent nutritional intake and avoid of malnutrition (Splett ,1991 and Weimann *et al.*,1997)

Nutritional assessment passes through many sources such as anthropometric, clinical, biochemical and dietary data (Rolfes and Debruyne, 1990). From anthropometric measurements, height (H) reflects past nutrition, however, mid upper arm circumference (AC), weight (W), body mass index (BMI) and triceps skin fold thickness (TSF) reflect percent nutritional status. Also, nutritional status was evaluated on the basis of body mass index which is one of several relations between height and weight (Lifshytz *et al.*,1991; Jeszka *et al.*, 2000 and El- Sayed , 2002)

Biochemical studies facilitate early detections of nutritional deficiency before appearance of malnutrition symptoms (Lifshytz *etal.*,1991) . Determination of lipids and lipid fractions eg., total cholesterol (TC) , triglycerides (TG), high and low density lipoproteins cholesterol (HDL-C and LDL-C) give an indication about nutritional syndromes and abnormalities indicators for nutritional status(Fields, 1998 and Kratz *et al.*, 2002).

The aim of the present work was to study the relationship between the food intake and body mass index (BMI), some of biochemical analysis and nutrients intake for some dormitory students living at Minuf city dormitory, Faculty of Electronic Engineering - Minufiya University as indicators of nutritional status of the students.

MATERIALS AND METHODS

MATERIALS:

Subjects:

The study was conducted on 66 male and 23 female students (were chosen as over weight and obese persons) who studying in Faculty of Electronic Engineering , aged from 18-24 years and lived at Minuf Dormitory, – Minufiya University.

Sources of kits:

Kits of total cholesterol (TC), triglycerides (TG) and high density lipoprotein cholesterol (HDL-C), Spin react , S.A. Ctra company, Santa Cloma, Spain , were obtained from Mecca medical company at shlabi street, Minuf- Minufiya .

METHODS:

1- Anthropometric measurements.

Body weight was measured to nearest 0.1 kg using a calibrated scale (no shoes). Height was recorded to the nearest centimeter. Body mass index (BMI) was calculated using the standard formula: weight (kg) / Height (m)² Gibson (1990).

2- Food intake:

Twenty four hours recall method was applied for a week to estimate mean food intakes. Analysis of the nutrients in the consumed food was carried out by using computerized data bank of composition (computer diet Analysis program of Ready to Eat Food – Original 1, Copyright 1995, Faculty of Home Economics, Minufya University). The adequacy of diets evaluated with regard to Dietary Reference Intake (Anon, 2002). for some macro nutrients, vitamins and minerals, while for certain other nutrients by Anon, (1989).

3- Biochemical Analysis:

After collecting the blood samples from the fasted students; the fresh blood samples were left to co-agulate, centrifuged at 3000 rpm /20 min / 37°C for obtaining serum which directly analyzed. Serum total cholesterol (TC) was determined according to (Fossatti and Prencipe, 1982). Serum high density lipoproteins cholesterol (HDL-C) was determined according to Lopez-virella *et al.* (1977). And serum low density lipoproteins cholesterol (LDL-C) were calculated according to Friedewald *et al.*, (1972). by the following equation :-

$$\text{LDL-C (mg /dl)} = \text{T.C} - (\text{T.G} / 5) - \text{HDL-C}$$

4- Statistical analysis:-

Statistical analysis was calculated to introduce means (M) and standard deviation (S.D) by using SPSS statistical program (Johnston,1995).

RESULTS AND DISCUSSION

1 - Anthropometric measurements

Data in table (1) show the distribution of BMI for both sexes studied subjects .The prevalence of overweight , defined as BMI (25 to 29.9 kg/m²) ,was 36.91% among males and 16.39 % among females .Meanwhile, 7.38% of males and 21.31% of females were suffering from obesity , they have BMI from 30 to >30 kg /m² according to finding of (Anon,1998).

These results indicated that the highest percent for overweight was noticed in males while females recorded the highest percent for obesity .These increases may be attributed to the bad nutritional behavior since their childhood especially whose parents have low nutritional awareness or illiterate or living in rural areas .

Sreyn *et al.* , (2000) mentioned that The prevalence of overweight (BMI 25) was relatively high in urban (27.7%) and rural women (22.9%). Anthropometric measurements were taken in Minuf city dormitory by searcher

Table (1): Distribution of studied subjects according to body mass index (BMI) classification.

BMI Classification*	Males		Females	
	No	%	No	%
overweight (25 -29.9kg/m ²)	55	36.91	10	16.39
Obesity (30 -39.9kg/m ²)	11	7.38	13	21.31

* National Institutes of Health, National Heart, Lung, and Blood Institutes, 1998

Table (2) shows mean and standard deviation of body weight, body height and body mass index (BMI) of males and females students. Values as

percent of standard (Anon, 1989) are also presented. The mean of weight for group A and B for males and females were more than standard (112.01 and 130.93, 118.97 and 143.64%) respectively. These results agree with those of Kalarzyk *et al.* (2005) who mentioned that overweight and obesity among men was 13.4% VS 5.8%.

Table (2): Comparison between mean \pm SD of anthropometric measurements as percentage of standard for male and female students.

Items	Males				emales			
	Group A	%St*	Group B	% St*	Group A	%St*	Group B	%St*
Age (year)	21.0 \pm 1.91		20.64 \pm 1.69		20.80 \pm 2.30		20.92 \pm 2.40	
Weight (kg)	80.65 \pm 7.85	112.01	94.27 \pm .08	130.93	69.00 \pm 8.03	118.97	83.31 \pm 6.54	143.64
Height (cm)	173.11 \pm 8.05	97.80	173.82 \pm 8.34	98.20	160.30 \pm 5.85	97.74	158.85 \pm 5.23	96.86
BMI (kg/m ²)	27.03 \pm 1.26		31.15 \pm 0.96		27.20 \pm 1.14		32.70 \pm 1.77	

Mean \pm Standard

A-Overweight

B-Obesity

* compared with RDA (1989).

with regard to height , heights of males and females students(A and B groups) were less than standard group (97.80 , 98.20 and 97.74 , 96.86%), respectively. This could be it attributed to some hereditary factors or to bad nutrition in the childhood stage. The highest in mean weights in male and female students consequences of the increased in amount of energy intake was consumed by students also physical activity in females less than in males. These results are in harmony with those findings of Header *et al.* (2006), who mentioned that overweight and obesity among females were more than males.

2- Biochemical measurements:

Table (3) shows the means and standard deviations (SD) of lipid fractions of studied students. Serum total cholesterol (T.C) and triglycerides (T.G) seems to be increased in both groups A and B in males and females more than normal values. On the other hand, high density lipoproteins cholesterol (HDL-C), increased in males group (A and B) than normal values, but decrease in females group (A and B) was found compared with normal values. Respect to low density lipoproteins cholesterol (LDL-C) were highly increased in females group (A and B) than males group (A and B)and decreased in both males and females than normal values.

Table (3): Serum lipid profile of male and female students.

Items	Normal Values	Males		Normal* Values	Females	
		Group A	Group B		Group A	Group B
T-C(mg/dl)	<200	207.44 \pm 1.42	224.77 \pm 3.82	<200	226.62 \pm 1.78	234.96 \pm 1.89
T-G(mg/dl)	<250	318.11 \pm 7.24	459.81 \pm 90.70	<250	393.42 \pm 2.64	442.07 \pm 2.18
HDL-C(mg/dl)	>55	67.57 \pm 1.28	77.46 \pm 4.23	>65	38.57 \pm 1.28	53.73 \pm 1.93
LDL-C(mg/dl)	150	76.24 \pm 1.51	60.80 \pm 1.86	150	159.16 \pm 1.41	92.81 \pm 0.49

A-Overweight

B-Obesity

* Fossatti and Prncipe, 1982; Lopez-virella *et al.* 1977 and Friedewald *et al.*, 1972).

Screening of young hypercholesterolemics is important because they are highly susceptible atherosclerotic disease (Nakao *et al.*, 2001). Also, Rabelo *et al.* (1999) reported that increased levels of total cholesterol (T-C),

LDL-C and T.G is a high prevalence of risk factors for atherosclerosis. Thus revealed that females students were subjected to the risk of atherosclerotic and coronary heart diseases (CHD) than males students because they characterized by high values of TC , TG and LDL-C.

3- Nutrients intake:

Table (4) shows the comparison between the daily intake of macronutrients for males and females students group A and B. The average daily calorie intake represents 140.5 and 147.8 % of RDA for males group A and B and 126.7 and 149.6 % of RDA for females group A and B. This result disagree with Header *et al.* (2006) Who indicated that the average daily calorie intake represents 92.2% and 100.1% of RDA for male and female students . Also, Noor EL- deen *et al.* (1996) found that energy intake derived from food as a cause of obesity due to the highest amount of energy intake by females causes and consequences of obesity .

The average daily protein consumption within the investigated students was high for both males group A and B (246.4 and 245.0 %) and females group A and B (205.7 and 247.6 % of RDA) among the male and female students respectively . However it is observed that, the consumption of plant protein is more than animal protein, this may be due to that plant proteins are relatively cheap and can be kept or stored for along time, while animal proteins require special storage facilities. This result agree with Header *et al.* (2006) who found that protein intake for males were higher than females and increased than RDA. Also, El-khalifa *et al.* (2000) found that protein intake in males was higher than females and their protein consumption came mostly from cereals and legumes.

With regard to carbohydrate, fiber and fat, it could be noticed that mean intake of carbohydrate, fiber and fat of male students group A and B was higher compared with female students group A and B while, cholesterol level within female students group B was higher than male students group A and B and female students group A (473.80±77.20, 465.67±82.82 and 376.96 ±103.37, 503.69±132.34), respectively.

Table (5) presents the comparison between mean daily as micronutrients intake of vitamin A was lower than Anon, (2002). Among all students vitamin A was 68.1, 69.9, 64.6, 85.7% of DRI for male group A and B and female group A and B students respectively. This results possibly due to low intake of fresh vegetables and fruits as well as dairy products. Consumption of vitamin C, B1, B2, B6 and B12 by male students were higher compared with female students .With respect to Niacin was higher than Anon, (2002) for all group students .

On the other hand, minerals daily intake, especially calcium, was lower than that recommended by Anon, (2002) for all students group and this due to the decrease amount of dairy products intake ,in this respect, Lancaster *et al.*(2004) mentioned that most of calcium in the diet came from dairy products (milk ,yoghurt and cheese), and this is in accordance with results presented in Table(4 and 5). Consumption of phosphorus increased for males than females (311.8, 311.3% and 226.0, 251.3% of RDA).

Table (4): Comparison between mean daily intake of macro-nutrients for male and female students.

Items	Males			Females			
	Group A	%of RDA*	Group B	%of RDA*	Group A	Group B	%of RDA*
Calories (kcal)	4074.89±3042		4287.11±483.13	147.8	2788.29±513.47	3290.73±381	
Protein A (g)	60.03± 16.41		58.78 ± 13.54		45.57± 4.00	55.62± 8.32	149.6
Protein P (g)	82.90± 8.32	140.5	83.32 ± 9.24		49.06± 9.90	58.27± 8.35	
T-protein (g)	142.94±17.26		142.10±19.06		.63 ± 9.43	113.89±13.55	126.7
Fat A (g)	50.99± 5.92		63.43 ± 10.63	245.0	44.67± 5.47	55.62± 11.03	
Fat P (g)	60.49± 12.13	246.4	73.76 ± 11.27		41.39± 23.34	48.20± 10.60	
Total fat (g)	111.49±14.43		137.19± 20.66		86.05± 20.94	153.81±13.95	205.7
Carbohydrate (g)	629.57±50.43		647.7 ± 61.07		410.16± 75.72	471.60±55.29	
Fiber (g)	39.04± 6.49		40.38 ± 6.91		21.68± 4.66	27.01 ± 9.17	
Cholesterol (mg/dl)	473.80±77.20		465.67± 82.82		376.96± 103.37	503.69±132.4	

Mean ± Standard A-Overweight B-Obesity * RDA (1989).

Table (5): Comparison between mean daily intake of micro-nutrients for male and female students.

Items	Males			Females			
	Group A	%of DRI*	Group B	%of DRI*	Group A	Group B	%of DRI*
Vitamins							
Vitamin A (µg)	680.81±101.03	68.1	699.22 ± 84.68	69.9	517.08 ± 60.38	685.45± 78.71	85.7
Vitamin C(mg)	65.55 ± 45.12	109.3	95.26 ± 42.59	158.8	15.83 ± 4.62	190.83 ± 98.25	90.83
Vitamin B1(mg)	2.27 ± 0.22	189.2	2.34 ± 0.26	195.0	1.56 ± 0.23	1.74 ± 0.23	158.2
VitaminB2(mg)	4.33 ± 0.55	333.1	4.35 ± 1.29	334.6	3.02 ± 0.48	2.97 ± 0.57	270.0
Niacin (mg)	29.25 ± 3.54	182.8	31.48 ± 4.04	196.6	21.88 ± 2.42	26.55 ± 2.93	189.6
VitaminB6(mg)	2.94 ± 0.606	226.2	2.62 ± 0.50	201.5	2.04 ± 0.33	2.24 ± 0.35	172.3
VitaminB12(µg)	3.57 ± 1.98	148.8	4.27±1.72	177.9	2.33±0.40	3.02 ± 0.94	125.8
(Z) Minerals							
Calcium(mg)	174.99±39.23	17.5	147.39±93.66	14.7	674.15±58.57	940.63±29.36	94.1
Phosphorus(mg)	2182.88±516.53	311.8	2178.99±596.41	311.3	1582.33±196.40	1758.90±188.38	251.3
Iron A(mg)	27.18±3.06	269.4	7.35±2.44	277.8	6.24±1.31	8.29 ±1.85	146.1
Iron P(mg)	19.77±2.76	154.1	20.43±2.92	153.1	11.93±1.87	13.63 ±2.26	146.7
Total Iron (mg)	26.94±3.34		27.78±3.50		18.17±2.65	21.91±3.85	
Zinc (mg)	23.12±2.24		22.96±2.72		15.86±3.68	17.60±2.47	

Mean ± Standard A-Overweight B-Obesity *DRI (2002)

Also, dietary intake of iron and zinc compared with that of RDA is higher in males than females (269.4, 277.88% and 121.1, 146.1%) and (154.1, 153.1% and 132.2, 146.7%). These results are agreed with those of Griffin *et al.* (2004). who mentioned that increase the zinc intake is due to consumption of foods containing relatively high amounts of zinc such as beef, shellfish, meat, poultry, and legumes. Also, Iron intake was more than the RDA which this may be due to consumption foods rich in iron. Dollman (1986) reported that the best dietary sources of iron are meats, dried legumes and fruits and enriched cereal products.

CONCLUSION

Eighty nine students of the Minufia University, 66 male and 23 female aged 18-24 years were put forwarded to examine their dietary intake, anthropometric measurements and serum lipid profile. From results in this study, it could be concluded that female students may be subjected to the risk of atherosclerotic and coronary heart diseases (CHD) because of a high values of serum TC, TG and LDL-C than male students.

REFERENCES

- Abd El - Hady, E. E. (1997). Assessment of nutritional status of students of Home Economics faculty, El- Azhar University. M.S.C., Thesis, Faculty of Home Economic, Helwan University.
- Anonymous. (1989). The national Adolescent student health survey A report on the health of America's youth Oakland, C A . Third Party Publishing Company.
- Anonymous (1989): Recommended Dietary Allowances, 10th edition National Research Council, Washington D.C.
- Anonymous. (2002). Dietary Reference Intake for energy, carbohydrate, fiber, fat, fatty acid, cholesterol, F.N.B., Institute of Medicine, I.O.M. This report may be access11ed Via www. NAP, ed.
- Dollman, P. R. (1986). Biochemical basis for manifestations of iron deficiency. *Annu. Rev. Nutr.*, 6:13.
- EL-Khalifa, A. M.; Godbi, S. and Mohammed, S. (2000). Nutrition assessment of succulents in university . *J. of Ahfad*, 17(1):33.
- El -Sayed, G. A.A. (2002). Evaluation of Nutritional Status of Girls sample (Teen - Agrees) comparative study Between Al Exandria and Minufiya Governorates. M.Sc. Thesis, Faculty of Home Economics, Minufiya University, Egypt.
- Fields, M. (1998). Nutritional factors adversely influencing the glucose insulin system. *J. Am. College Nut.*, 17 (4): 317.
- Fossatti, P. and Prencipe, L. (1982). The determination of triglyceride using enzymatic methods. *Clin. Chem.*, 28:2077.
- Friedewald, W.I. Stewart, S.W. and Arnold, T.F. (1972). Estimated calculation of low - density lipoprotein. *Clin. Chem.*, 18: 499.
- Gibson, R.S. (1990): Principle of nutrition assessment. Publishers oxford Univ. Press, Inc . Oxford, New York Toronto.

- Griffin, I. J; Hicks P. D; Liang L.K and Abrams, S.A.(2004). Metabolic adaptations to low zinc intakes in premenarcheal girls. *Am. J. Clin. Nutr.*, 80:385.
- Header, E. A.; Moubarak, A. E.; Abd.Ellatif, A. O. (2006). Evaluation of nutrients intake of agender at random group of Minufiya University students. International conference and Exhibition, Food and Tourism an Approach to the world of tomorrow 1-3 March (2006), Cairo International conference center , Egypt.
- Jeszka J, Zielk M, and Bajerska J. (2000): Evaluation of nutritional habits, nutritional status and physical performance in selected group of adolescents. *Med wieku Rozwoj*; 4 (3 suppl 1):65.
- Johnston, W.(1995).Basic Econometrics (3rded). SPSS Ver.10. California University.
- Kalarzyk, E.; Ostachowska, Gasior, A. and Skop, A. (2005): The protein participation in daily diet and nutritional status of medical students in Krakow. *J. Roczn. Akad. Med. Bialymst.*, 1 (1):39.
- Kratz, M.; Cullen, P.; Kannenberg, F.; Kassner, A.; Fobker, M.; Abuja, P.M.; Assmann, G. and Wahrburg, U. (2002). Effects of dietary fatty acids on the composition and oxidizability of low – density lipoprotein . *Euro. J. Clin. Nutr.*, 56 (1): 72.
- Lancaster, K.J; Wright, H.S; Weitzel, L.B ; Mitchell, D.C; Friedmann, J.M; and Jensen, G. L (2004). Hypertension related dietary patterns of rural older adults. *Peven. Med.*, 38 (3): 812.
- Lifshytz, F.; Finck, N. M. and Lifshitz, J. Z. (1991). Children's nutrition Hones and Bartlett Publishers, Boston London.
- Lopez-virella, M. F.; Stone, S.; Ellis, S. and Collwel, J. A. (1977). Cholesterol determination in high density lipoproteins separated by three different methods. *Clin. Chem.*, 23: 882.
- Nakao, M.; Ando, K.; Nomura, S.; Kuboki, T.; Vehara, Y.; Toyooka, T. and Fujita, T. (2001). Depressive mood accompanies hypercholesterolemia. *JPN. Heart J.*, 42 (6):739.
- National Institutes of health. National Heart, Lung, and Blood Institute. (1998). Clinical guidelines on the identification evaluation and treatment of overweight and obesity in adults. National Institutes of health. National Heart, Lung, and Blood Institute Washington, DC.
- Noor, EL- deen, F.; Tawfik, Afaf, A.; Moussa, wafaa, A.; Hussein, M.A. and Shaheen, F.M. (1996). Energy intake and expenditure among obese females. *Egypt J. Nutr.* XI (1) 9.
- Rabelo, L. M.; Viana, R. M.; Schimith, M. A.; Patin, R.V.; Valverde, M. A.; Denadai, R.C.; Cleary, A. P.; Lemes, S.; Auriemo, C.; Fisberg, M. and Matinez, T.L. (1999). Risk factors for atherosclerosis in students a private university in Sao Paulo Brazil. *Arq. Bras. Cardiol.*, 72 (5): 569.
- Rolfes, S. R. and Debruyne, L. K. (1990). Life Span Nutrition Conception through Life. West publishing Company, St. Paul, New York.
- Steptoe A, Wardle J. Cui W, Bellisle F, Zotti A, Baranyai, R. and Sanderman, R. (2002): Trends in smoking, diet, physical exercise, and attitudes toward health in European University students from 13 countries 1990-2000. *Prev. Med.*, 35: 97.

- Splett, P.L. (1991). Effectiveness and cost effectiveness of nutrition care, a critical analysis with recommendation. J. Am. Diet. Assoc., 91: 1120.
- Sreyn , N.P.; Senekal, M. ; Brits, S.; Alberts, M. ; Mashego, T. and Nel, J.H.(2000).Weight and health status of black female students.S. Afr. Med. J.,90 (2): 146- 152 .
- Weimann, A.; Mueller, M. J.; Adolph, M; Behrendt, W.; Bischoff, S. C.; kemen, M.; Leweling, H.; Putziger, J.; Solberg, O. and Schuster, H.P. (1997). Assessment of Requirements, tolerance and benefit nutritional therapy. Intersivitedmedizin und Notfallmedizin, 34 (7): 744.

العلاقة بين المأخوذ الغذائي و مؤشر كتلة الجسم ومستوى بعض لبيدات الدم لمجموعة من طلاب المدينة الجامعية بمدينة منوف -جامعة المنوفية
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**معهد بحوث تكنولوجيا الأغذية -مركز البحوث الزراعية

في هذه الدراسة تم دراسة التقييم الغذائي عن طريق قياس مؤشر كتلة الجسم (BMI) و بعض البيدات الكلية في مصل الدم مثل الكوليسترول الكلي (T.C) و الجليسيريدات الثلاثية (T.G) و الليبوبروتينات عالية الكثافة (HDL-C) و منخفضة الكثافة (LDL-C) و ذلك في مصل الدم الخاص بطلاب مدينة الطلبة الجامعية بجامعة المنوفية و ذلك بهدف تقييم العلاقة بين القياسات المشار إليها سابقا و المأخوذ الغذائي لهم تم اختيار الطلاب سواء ذكور أو إناث . و كلا الطلاب سواء ذكور أو إناث تم تقسيمهم الى مجموعتين أ ، ب .

أشارت النتائج المتحصل عليها أن متوسط عمر العينة بلغ ($21 \pm 1,91$ ، $20,64 \pm 1,79$ سنة) للأولاد مجموعة أ ، ب ($20,80 \pm 2,30$ ، $20,92 \pm 2,40$ سنة) للإناث مجموعة أ ،

ب

بالنسبة للقياسات الجسمية كان متوسط الطول ($173,11 \pm 8,05$ ، $173,82 \pm 8,34$ سم) للأولاد مجموعة أ،ب بحيث تمثل ($97,80$ ، $98,20 - 97,74$ ، $96,86$ %) من الطول المثالي بالنسبة للطلبة و الطالبات علي التوالي.

أما نتائج الوزن فكانت بنسبة مئوية ($112,01$ ، $130,93 - 118,97$ ، $143,64$ %) من الوزن المثالي و كانت الزيادة في الوزن أكبر في الإناث. وان متوسط المأخوذ من السعرات الكلية ($4074,89 \pm 304,20$ ، $4287,11 \pm 483,13$ كيلو كالورى) للأولاد مجموعة أ ، ب و ($2788,29 \pm 513,47$ ، $32290,73 \pm 3284,31$ كيلو كالورى) للإناث مجموعة أ ، ب علي التوالي كان أكبر من الاحتياجات الغذائية الموصى بها في RDA و أوضحت التحاليل الخاصة بسيرم الدم أن متوسط نسبة الكوليسترول الكلي (T.C) ، (T.G) ، (LDL-C) كانت في الإناث اعلي من الذكور بينما نسبة ال (HDL-C) كانت في الذكور اعلي من الإناث.

وعلي ضوء هذه النتائج وجد أن إناث المدينة الجامعية أكثر عرضة لأمراض تصلب الشرايين و القلب عن الذكور نظرا لارتفاع قيم الكوليسترول الكلي (T.C) ، الجليسيريدات الثلاثية (T.G) و الليبوبروتينات المنخفضة الكثافة (LDL-C) في سيرم الدم.

لذلك توصي الدراسة بضرورة التقيف الغذائي مع مراعاة التوازن في المأخوذ من السعرات والعناصر الغذائية للطلاب زائد الوزن وتقليل المأخوذ من الطاقة وتشجيع النشاط الحركي وتجنب الحياة الساكنة لتحسين الحالة الغذائية و الصحية لهؤلاء الطلاب.

