Assessment the nutritional status of nursing schools students of Haram Hospitals, Giza Governorate

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Abstract

This study is designed to include assessment of the nutritional status of nursing schools students of Haram Hospitals - Giza governorate.

The objectives of this study areassessment of the socioeconomic status and anthropometric measurements of a random sample of nursing school students in Haram Hospitals-Giza Governorate,assessment of nutrients intakes from food consumption data collected by the 24 hr. recall method, estimation of adequacy of the diet as compared to the Recommended Dietary Allowances(RDA),Obtaining information about the food habits and evaluation of students knowledge about nutrients and nutrition and suggesting the necessary recommendations to improve the nutritional and health status of students.A random of nursing schools students of Haram Hospitals - Giza governorate has been selected, this sample included 98 female students aged 15: 18 years.Data was collected through personal interview and questionnaire to obtain the appropriate information was used different research methods.

- The results of the nutritional status Showed the following:

- The mean intake of total calories per day (1708.14kcal)and was representing (77.64%) of the recommended dietary allowances (RDA).

- The mean intake of plant protein, animal protein and total protein (38.1 gm , 28.9 gm , 67 gm) respectively, and represented the percentage of total protein intake (152.27%) of the recommended dietary allowances (RDA).

- The mean intake of carbohydrate and fat (227.12 gm ,59.63gm) respectively.

- **Minerals and Vitamins:**

It found Calcium (541.65 mg) as a percentage (45.14%) of the RDA, phosphorus (1048.42 mg) as a percentage (87.37%) of the RDA, total iron (14.89 mg) as a percentage (99.37%) of the RDA, sodium (2454.73 g) as a percentage (102.28%) of the RDA , potassium (1970.25 g) as a percentage (40.92%) of the RDA, zinc (7.72 g) as a percentage (64.33%) of the RDA and magnesium (276.59 g) as a percentage (92.19%) of the RDA .While The Vitamins recorded higher Rate of Vitamin A,vitamin E,vitamin B2,vitamin B12 and folate. As follow (1993.89 µg,20.68 µg,2.28 mg,2.8 µg and 219.4 mg) as percentage (249.24 , 258.5 , 175.35 , 140 and 121.89 %)

Key words: Adolescence,Nutritionalrequirement,Nutrition,Food habits.

INTRODUCTION

Adolescence is one of the most challenging periods in human development. It is an intense anabolic period and characterized by very rapid growth accompanied by many complex physiological and emotional changes **(Agostani*et al.*, 1994).**

Mclaren (1991) reported that during adolescence nutritional requirement are higher than at any other time in our lives. Adolescence is very vulnerable to nutritional problems. Their growth rapid rate which requires high quality diets, Coupled with their desire for independence and social needs for acceptance may aggravate the poor dietary habits of adolescence.

Nutrition plays an increasingly large role in management of health problems. Great evidence of linkage between diet and disease is within an awareness of the importance of nutrition programs. Various kinds of nutrients supply the body within physiological needs, thus man must follow a complete balanced diet according to his daily efforts. Remarkable progress has been made during the past decade in understanding the nutritional need of adolescent and the relationship of nutrition to human aging process **(David Rush, 1993).** Because the adolescent male experiences greater gain in bone and lean tissue than the female does, he requires more protein, iron, zinc, and calcium than the female for development of these tissues, another reason for the male's larger requirements for these nutrients is his greater rate of growth **(Williams,1995).**

Food habits begin from the early years of life and are affected by many factors i.e. socioeconomic status of family, available foods and family size. Ignorance of nutrition has been observed in many socioeconomic groups, all over the world people eat what they like without knowing the nutritive value of food items. Changing food habits is a complex problem as our food habits are inherited from the families. Teenagers are much more autonomous than their grade school counterparts, and their eating habits are increasingly influenced by their peers and the media. Even when high school students are informed about good nutritional practices, they often lock the time, discipline, or sense of urgency to follow them **(Miller *et al.,* 1995).**

Nutritional assessment is of increasing importance in today's world, both in examining the nutritional health of population and determining the nutritional status of individuals in the community **(Gibson, 1990).**

Adolescence is defined by the World Health Organization as the period between childhood and adulthood, spanning from 10 to 19 years of age **(Gibson *et al.,*2002).**There are more than 1 billion adolescents (aged 10-18) in the world, one in six of the total population **(Jim Mam and Stewart Truswell.,2007).**

It is a crucial period for major changes in human body especially in females **(Bidad*et al.,*2008).**

Girls usually begin menstruating (reach menarche) during this growth spurt, and they grow very little beyond 2 years after menarche. Early maturing girls may begin their growth spurt as early as age 7 to 8, whereas early maturing boys may begin growing by age 9 to 10. During the growth spurt, girls gain about 10 in (25 cm) in height and boys gain about 12 in (30 cm).

Girls also tend to accumulate both lean and fat tissue **(Crawford*et al,.*2004).**

Jamie(2008) classified adolescence as follows: early adolescence, occurring between the ages of 13 and 15, middle adolescence, occurring between the ages of 15 and 17, and late adolescence, occurring between the ages of 18 and 21 years.

Adolescence, the transition from childhood to adulthood is accompanied by series of physical, biochemical, hormonal and psychological changes. There is marked variation between sexes and

individuals in timing, intensity of change in this period beginning with the appearance of sexual maturity and slowing of growth. Girls tend to grow more rapidly between 12-14 years and boys experience this rabid growth between 14 and 16 years, however, there are many individual variations to growth pattern **(Bendary, S.1997 and Hosny*et al.,*2005).**

Kresic*et al.,(*2008) showed that only 35% of the daily menus were nutritionally balanced. Most of the menus provided an excess of energy, protein, carbohydrate, saturated fat, phosphorus, riboflavin, and vitamin A. The levels of calcium and magnesium in the menus were suboptimal. The menus offered to adolescents provided approximately 2 serving of dairy products per day.

Lorson*et al.,* (2009) indicated that total vegetable and French fry intake was significantly higher among 12- to 18-year- adolescents in USA . Regarding sex differences, boys consumed significantly more fruit juice and French fries than girls.

Davis and Baker(1994) established that some vitamins acts as cofactors for enzymes that regulate metabolic processes, while others served as preserve the structural integrity of somebody components like connective, epithelial, cartilage and bony tissues. There are two types of vitamins according to its possibility for dissolving; fat- soluble (e.g. A, D, E, K) and water soluble (C,B) vitamins.

Ganong (1995) showed that nutrients content of minerals (e.g. calcium, phosphorus, zinc, sodium, potassium, magnesium and iron) have an important role in different pathways and maintaining body functions.

SUBJECTS AND METHODS

This study is designed to include assessment of the nutritional status of nursing schools students of Haram Hospitals – Giza Governorate.

A-Subjects:

A random sample of 98 students of females was chosen from nursing schools students of Haram Hospitals -Giza Governorate, Egypt.

Rang Age:

The age of the sample ranged (15 to 18 years old).

B-Methods of study:

1-Socio-economic status:

-Information about socio - economic status , included age , father's education level , mother's education level, father's job , mother's job , family size, income, and the expenditure on food.

2-Daily dietary intake:

• Information of daily dietary were collected during interviews.

• The 24-hour recall sheet was used for three days .

• A questionnaire was used to study diet history and food habits of sample.

• Nutrient values were derived from standard reference table Diet Analysis program (1995):Diet analysis for ready to fat foods, Faculty of Home Economics , Minufiya University, Version 1, Diet &Statistical Analyses Branch, Unit of special Nature,

Faculty of Home Economics Minufiya University for Each food, calculations were made for the contribution of food to energy , protein, fat, carbohydrate, calcium, zinc, magnesium, iron, vitamin A, thiamin, riboflavin, niacin, vitamin E, vitamin B6, vitamin B12, vitamin C, and folat.

The nutritive value of the consumed diet compared with the RecommendedDietary Allowances (**RDA, 1989**) appropriate for the subjects in study.

3-**Anthropometric measurements:**

The anthropometric measurements included weight(kg), height(cm), mid-upper arm circumference(cm), triceps skinfold thickness (mm), mid- upper arm muscle circumference(cm) and Body Mass Index (kg/m2) . Standards for (**Jelliffe 1966**) were used.

BMI(Body Mass Index)	
Under Weight	$16 < 20$ kg/m2
Desirable	$20 < 25$ kg/m2
Grade 1 Obesity	$25 < 30$ kg/m2
Grade 2 Obesity	$30 < 40$ kg/m2

The obtained results were estimated from:

A-Body weight:

Weight was assessed using abeam type balance, while subject stood with light clothes and bare feet. Standards for (**Jelliffe 1966**) were used.

B-Body height:

Height was taken with the flexible on- stretch tape. The subject stood on a floor with feet parallel and with heels buttocks, shoulders and back of head touching the upright board. The head had been hold comfortably erect with the lower border of the orbit in the same horizontal plan. The arms were hanging at the sides in natural manner Standards for **(Jelliffe 1966)** were used.

C- Thickness of skin fold (TSF):

Skin fold thickness in millimeters at the triceps muscle was measured with a harpenden skin fold caliper, the measurement was taken from the back of the arm, midway between the point of the acromion and olecranon processes while the arm was hanging relaxed.

D- Arm circumference (AC):

AC in centimeter was measured with a flexible tape. The tape was placed gently, but firmly, round the limb to avoid compression of the soft tissues between the acromion
and the processes with the arm hanging freely.

E- Arm muscle circumference (AMC):

AMC measure was obtained by an equation of Thickness of skin fold value in mm. and Arm circumference value in cm. were to derive Arm muscle circumference in cm by using the following equation:

AMC=AC- (3.14x TSF mm)cm

F-Body mass index (BMI):

This index was obtained by calculating as follow:

BMI= Weight(kg) ÷ (Height in meter)2

4-Statistical Analysis:

- The first step done in order the collected data was to tabulate all the raw values for each variable, for the sample.

- Mean and standard deviation of each variable was calculated for the whole sample .

- Correlation coefficients between all the variables of this study were obtained, and their significance were also identified.

- The distribution of the percentage of nutrients consumption of the sample(comparing with the R.D.A.) was done.

- The distribution of anthropometric measurements of sample compared with the standard (SPSS 1998) was also done, in the Statistical Analysis Unit, Faculty of Home Economics, Menofia University.

Results and Discussion

-Nutrients:

-Table (1) showed that the mean andstandard deviation of nutrients intake per day by the sample, compared to the RDA (1989)

1- Energy:

The mean intake of energy was 1708.14 k.cal/day which represents 77.64% of the RDA(1989), and it was standard deviation is taken from energy was ± 109.83 k.cal. **Moffat (1984)** reported the level of energy consumption was 1923 k.cal among teenager girls in USA. However, **Naga (1996)** found that the average daily energy consumption by Egyptian female students was 2138.92 k.cal,**Torun (2005)** noted that energy requirements (ER) were calculated adding 8.6 KJ(2 Kcal) for each gram of weight gained during growth.

2-Protein:

a) Animal protein:

The mean intake of animal protein was 38.1 gm/day, and it was standard deviation is taken from animal protein was ± 3.68 gm.

b)Plant protein:

The mean intake of plant protein was 28.9 gm/day, and it was standard deviation is taken from plant protein was ± 2.15 gm.

C) Total protein:

The mean intake of total protein was 67 gm/day which represents 152.27% of the RDA(1989), and it was standard deviation is taken from total protein was ± 4.56 gm. **Rolfes and Debrvyne (1990)** stated that total nutrition needs especially protein and energy are greater during adolescence that at any time of life. Addition **Garrow (1993)** mentioned that the adolescents need large amount of protective nutrients such as protein, vitamins and minerals than children and adults,**Gleason and Suitor (2001)** reported that protein needs of adolescents are influenced by the amount of protein required for maintenance of existing lean body mass and accrual of additional lean body mass during the adolescent growth spurt. When protein intakes are consistently inadequate, reductions in linear growth, delays in sexual maturation, and reduce accumulation of lean body mass may be seen. US adolescents consume more than adequate amount of protein. National data suggest that on average, teens consume about twice the recommended level of protein

and 31% of adolescent boys 14-18 years of age consume more than the RDA for protein.

3-Fat:

a)Animal fat:

The mean intake of animal fat was 30.45 gm/day, and it was standard deviation is taken from animal fat was ± 3.7 gm.

b)Plant fat:

The mean intake of plant fat was 29.18 gm/day, and it was standard deviation is taken from plant fat was ± 2.57 gm.

c)Total fat:

The mean intake of total fat was 59.63gm/day, and it was standard deviation is taken from total fat was ± 4.79gm,**Subar*et al.,* (1998)** showed that the major sources of total and Saturated fat intakes among adolescents include milk, beef, cheese, margarine, and food such as cakes, cookies, donuts, and ice cream.

4-Carbohydrate:

The mean intake of carbohydrate was 227.12gm/day, and it was standard deviation is taken from carbohydrate was ± 15.72 gm,**Gleason and Suitor (2001)** declared that sweeteners and sugars provide approximately 20% of total calories to the diets of adolescents. Mean intake of added sugars ranges from 23 teaspoons /day (nearly 1/2 cup) for females ages 9-18 to 36 teaspoons /day (3/4 cup) for males ages 14-18 yr.

5-Fiber:

The mean intake of fiber was 11.24 gm/day, and it was standard deviation is taken from fiber was ± 1.12gm,**Suber*etal.,* (1998)** pointed that significant sources of fiber in the diet of adolescents include whole grain breads, ready-to-eat cereal potatoes, popcorn and related snack foods, tomatoes, and corn.

6-Cholesterol:

The mean intake of Cholesterol was 289.85gm/day, and it was standard deviation is taken from Cholesterol was ± 32.73 gm, **US Department of Health and Human Services (1995)** indicated that mean cholesterol and sodium intakes increase with age for both males and females. Males ages 14-18 have a mean cholesterol intake of 320 mg/day, which exceeds the goal of 300mg/day.

Table (1) Percent distribution of studied sample according to intake of nutrients.

Nutrients	Mean±SD	RDA%
Energy(kcal)	1708.14±109.83	77.64
Animal protein (gm)	38.1±3.68	-
Plant protein (gm)	28.9±2.15	-
Total protein (gm)	67±4.56	152.27
Animal fat (gm)	30.45±3.7	-
Plant fat (gm)	29.18±2.57	-
Total fat (gm)	59.63±4.79	-
Carbohydrate (gm)	227.12±15.72	-
Fiber (gm)	11.24±1.12	-
Cholesterol (gm)	289.85±32.73	-

-Minerals:

-Table (2) showed that the mean andstandard deviation of minerals intake per day by the sample, compared to the RDA (1989) .

1-Calcium:

The mean intake of calcium was 541.65 mg/day which represents 45.14% of the RDA(1989), and it was standard deviation is taken from calcium was ± 47.18 mg,**Gao***et al.,* **(2006)** found that with food use and energy and fat constraints, diets formulated by linear programming provided 1,150 and 1,411 mg/day of calcium for girls and boys, respectively. With the Dietary Reference intakes constraints, these decreased to 869 and 1,160mg/day. When we introduced 1.5 servings of fortified juice to the diets, the highest calciumintake increased to 1,302mg/day for girls and to 1,640mg/day for boys.

2-Phosphorus:

The mean intake of Phosphorus was 1048.42 mg/day which represents 87.37% of the RDA(1989), and it was standard deviation is taken from Phosphorus was ± 71.31 mg

3-Iron:

a)Animal iron:

The mean intake of animal iron was 5.71 mg/day, and it was standard deviation is taken from animal iron was ± 0.69 mg.

b)Plant iron:

The mean intake of plant iron was 9.18 mg/day, and it was standard deviation is taken from plant iron was ± 0.78 mg.

c)Total iron:

The mean intake of total iron was 14.89 mg/day which represents 99.37% of the RDA(1989), and it was standard deviation is taken from total iron was ± 1.12 mg,**Pynaert***et al.,* **(2005)** mentioned that the mean total iron intake in Ghent (Belgium) for boys was 13.4mg/day and for girls 10.1 mg/day. A proportion of 38.8% of the boys and 99.5% of the girls had a mean total iron intake below the Belgian Recommended Dietary Allowance and 3.1% of the boys and 71.2% of the girls below the British Estimated Average Requirement. When bio available iron intake is considered, 84.5% of the boys and only 16.5% of the girls met the age-specific requirement.

4-Sodium:

The mean intake of sodium was 2454.73 mg/day which represents 102.28% of the RDA(1989), and it was standard deviation is taken from sodium was ± 176.73 mg,   **James** *et al.,* **(1990)** said that excess sodium intake results in edema, high blood pressure, potassium deficiency, and liver and kidney disease.

5-Potassium:

The mean intake of potassium was 1970.25 mg/day which represents 41.92% of the RDA(1989), and it was standard deviation is taken from potassium was ± 142.6mg,**Miller***et al.,* **(1995)** said that in contrast, increasing potassium intake decreases urinary calcium excretion and potentially protects skeletal mass milk and other dairy foods provided 21.1% of the per capita potassium in the U.S. food supply in 1985.

6- Zinc:

The mean intake of zinc was 7.72 mg/day which represents 64.33% of the RDA(1989), and it was standard deviation is taken from zinc was ± 0.532 mg.It concerned with the healing of wounds, nucleic acid synthesis, protein metabolism, development of sexual organs, cellular membrane structure and function, release of insulin and growth **(Prasad***et al.,* **1995).**

7-Magnesium:

The mean intake of magnesium was 276.59 mg/day which represents 92.19% of the RDA(1989), and it was standard deviation is taken from magnesium was ± 20.03 mg,**Altura***et al.,* **(1998)** indicated

that short-term Mg deficiency makes the brain vulnerable to hypoxic-lethal stork insults induced by alcohol administration.

Table (2) Percent distribution of studied sample according to intake of minerals.

Minerals	Mean±SD	RDA%
Calcium (mg)	541.65±47.18	45.14
Phosphorus(mg)	1048.42±71.31	87.37
Animal Iron (mg)	5.71±0.69	-
Plant Iron (mg)	9.18±0.78	-
Total Iron (mg)	14.89±1.12	99.37
Sodium (mg)	2454.73±176.73	102.28
Potassium (mg)	1970.25±142.6	41.92
Zinc (mg)	7.72±0.532	64.33
Magnesium (mg)	276.59±20.03	92.19

-Vitamins:

-Table (3) showed that the mean andstandard deviation of vitamins intake per day by the sample, compared to the RDA (1989).

1-Vitamin A:

The mean intake of vitamin A was 1993.89 µg/day which represents 249.24% of the RDA(1989), and it was standard deviation is taken from vitamin A was ± 250.06µg,**Russell (2001)** stated that vitamin A plays a vital role in reproduction, growth and immune function. To ensure adequate body stores of vitamin A, boys and girls ages 9-13 should consume 600 µg/day, females ages 14-18, 700 µg/day, and males ages 14-18 , 900 µg/day. The most obvious symptom of inadequate vitamin A consumption is vision impairment, especially night blindness, which occurs after vitamin A stores have been depleted.

2-Vitamin C:

The mean intake of vitamin C was 64.29 mg/day which represents 107.15% of the RDA(1989), and it was standard deviation is taken from vitamin C was ± 4.92mg,**Bederova*et al.,* (2000)** stated that vegetarians have significantly higher levels of antioxidant vitamins (vitamin E and C).

3-Vitamin D:

The mean intake of vitamin D was 1.96 µg/day which represents 19.66% of the RDA(1989), and it was standard deviation is taken from vitamin D was ± 0.29µg,**Hemmingsen*et al .,* (1998)** reported that vitamin D3 increases tans cellular Ca transport.

4-Vitamin E:

The mean intake of vitamin E was 20.68 µg/day which represents 258.5% of the RDA(1989), and it was standard deviation is taken from vitamin E was ± 1.48µg,**Gleason and Suitor (2001)** reported that vitamin E is well known for its antioxidant properties, which become adolescence. The RDA for vitamin E for 9-13 years old is 11 mg/ day and 15 mg /day for 14-18 years old.

5-Vitamin B1:

The mean intake of vitamin B1 was 0.99 mg/day which represents 90% of the RDA(1989), and it was standard deviation is taken from vitamin B1 was ± 0.08mg.

6-Vitamin B2:

The mean intake of vitamin B2 was 2.28 mg/day which represents 175.38% of the RDA(1989), and it was standard deviation is taken from vitamin B2 was ± 0.12mg.

7- Niacin:

The mean intake of Niacin was 14.45 mg/day which represents 96.33% of the RDA(1989), and it was standard deviation is taken from Niacin was ± 0.58mg.

Clare (1998) indicated that these vitamins (niacin, B1, B2) are involved in energy metabolism, so there is an increase in requirements for them during adolescence. Niacin, riboflavin and thiamin should be met through increased food intakes. Thus supplying both the necessary energy and vitamins. This is best achieved by encouraging increased dietary intakes of bread, cereal, fruit, and vegetables low fat, dairy products and meat.

8-Vitamin B6:

The mean intake of vitamin B6 was 1.22 mg/day which represents 81.33% of the RDA(1989), and it was standard deviation is taken from vitamin B6 was ± 0.05 mg,**Shills and Olson (1994)** mentioned that vitamin B6 is involved in a large number of energy system associated with nitrogen metabolism. The rapid growth of muscle mass, particularly in boys makes vitamin B6 adequacy important during puberty.

9- Vitamin B12:

The mean intake of vitamin B12 was 2.8 mg/day which represents 140% of the RDA(1989), and it was standard deviation is taken from vitamin B12 was ± 0.29mg,**Guthrie (1989)** reported that

folacin and vitamin B12, which are essential for DNA and RNA synthesis, are needed in higher amounts which tissue synthesis is occurring rapidly, science tissue growth involves amino acid metabolism.

10- Folat:

The mean intake of folat was 219.41 µg/day which represents 121.89 % of the RDA(1989), and it was standard deviation is taken from folat was ± 9.27µg,**Subar*et al.,* (1998)** stated that folate plays an integral role in DNA, RNA and protein synthesis. Thus, adolescents have increased requirements for folate during puberty. The RDA for folate is 300µg/day for 9-13 years old and 400µg/day for 14-18 years old. The top five sources of dietary folate by adolescents include ready-to-eat cereal, orange juice, bread, milk, and dried beans or lentils.

Table (3) Percent distribution of studied sample according to intake of vitamins.

Vitamins	Mean±SD	RDA%
Vitamin A (µg)	1993.89±250.06	249.24
Vitamin C (mg)	64.29±4.92	107.15
Vitamin D (µg)	1.96±0.29	19.66
Vitamin E (µg)	20.68±1.48	258.5
Vitamin B1 (mg)	0.99±0.08	90
Vitamin B2 (mg)	2.28±012	175.35
Niacin (mg)	14.45±0.58	96.33
Vitamin B6 (mg)	1.22±0.05	81.33
Vitamin B12 (mg)	2.8±0.29	140
Folat (µg)	219.4±9.27	121.89

-Correlation between BMI and nutrients intake per day:
- Results in table (4) indicated that, no significant correlation were observed between BMI of the sample and all nutrients intake per day.

-Correlation between BMI and minerals intake per day:
- Results in table (4) indicated that, no significant correlation were observed between BMI of the sample and all minerals intake per day.

-Correlation between BMI and vitamins intake per day:
- Results in table (4) indicated that, no significant correlation were observed between BMI of the sample and all vitamins intake per day.

Table(4) Correlation coefficients between BMI and nutrients, minerals&vitamins intake per day.

Nutrients	BMI	Minerals	BMI	Vitamins	BMI
Energy(kcal)	0.0259	Calcium (mg)	0.0739	Vitamin A (µg)	-0.1739
Animal protein (gm)	0.0571	Phosphorus(mg)	0.0251	Vitamin C (mg)	-0.0486
Plant protein (gm)	0.0268	Animal Iron (mg)	0.0201	Vitamin D (µg)	0.0864
Total protein (gm)	0.0586	Plant Iron (mg)	0.0712	Vitamin E (µg)	-0.0301
Animal fat (gm)	0.0409	Total Iron (mg)	0.0628	Vitamin B1 (mg)	0.0371
Plant fat (gm)	0.1284	Sodium (gm)	-0.0174	Vitamin B2 (mg)	-0.028
Total fat (gm)	0.1017	Potassium (gm)	0.0687	Niacin (mg)	0.0239
Carbohydrate (gm)	-0.0418	Zinc (gm)	0.0465	Vitamin B6 (mg)	0.1172
Fiber (gm)	0.0291	Magnesium (gm)	0.0567	Vitamin B12 (µg)	0.0767
Cholesterol (gm)	-0.0781			Folat (mg)	0.0348

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تقييم الحالة الغذائية لطالبات مدارس التمريض التابعة لمستشفيات الهرم – محافظة الجيزة

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الملخص العربى

استهدفت هذه الدراسة تقييم الحالة الغذائية لطالبات مدارس التمريض التابعة لمستشفيات الهرم- محافظة الجيزة . حيث تمتقييم الحالة الاجتماعية والاقتصادية والمقاييس الجسمية لأفراد العينة,تقييم المأخوذ من العناصر الغذائية من خلال استخدام طريقة استرجاع غذاء ٢٤ ساعة,تقدير مدى كفاية النظام الغذائى مقارنة بالتوصيات الغذائية المسموحة,الحصول على معلومات عن العادات الغذائية والوعى الغذائى لدى الطالبات, مع وضع مقترحات بالتوصيات اللازمة لتحسين الحالة الصحية و التغذوية للطالبات.

وقد تم اختيار عينة عشوائية من طالبات مدارس التمريض التابعة لمستشفيات الهرم- محافظة الجيزة, وشملت هذه العينة٩٨طالبة تتراوح أعمارهن بين ١٥ ، ١٨ سنة .

وتم جمع البيانات عن طريق المقابلة الشخصية والاستبيان للحصول على المعلومات المناسبة حيث تم استخدام الوسائل البحثية المختلفة.

وقد أظهرت نتائج الحالة الغذائية ما يلى:

-متوسط المأخوذ من السعرات الكلية يومياً (١٧٠٨.١٤) كيلوكالورى وكان يمثل (77.64 %) من التوصيات الغذائية المسموحة(RDA).

- متوسط المأخوذ من البروتين النباتى والحيوانى والبروتين الكلى (٣٨.١جم , ٢٨.٩جم , ٦٧جم) على التوالى ومثلت النسبة المئوية للبروتين الكلى المأخوذ (١٥٢.٢٧ %) من التوصيات الغذائية المسموحة

- متوسط المأخوذ من الكربوهيدرات والدهون (٢٢٧.١٢جم ,٥٩.٦٣جم) على التوالى .

- الأملاح المعدنية والفيتامينات :

- أظهرت النتائج أن متوسط المأخوذ من الأملاح المعدنية والفيتامينات مقارنة بالتوصيات الغذائية المسموحة

(RDA) كانت كما يلى:

- الكالسيوم (٥٤١.٦٥مجم) بنسبة مئوية (٤٥.١٤%) , الفوسفور (١٠٤٨.٤٢مجم) بنسبة مئوية(٨٧.٣٧%),الحديد الكلى (١٤.٨٩مجم) بنسبة مئوية(٩٩.٣٧ %) , الصوديوم (٢٤٥٤.٧٣ جم) بنسبة مئوية (١٠٢.٢٨%) , البوتاسيوم (١٩٧٠.٢٥ جم) بنسبة مئوية (٤١.٩٢%) , الزنك (٧.٧٢ جم) بنسبة مئوية (٦٤.٣٣%) , والماغنسيوم (٢٧٦.٥٩ جم) بنسبة مئوية (٩٢.١٩%) , بينما الفيتامينات سجلت أعلى معدل لكل من فيتامين (أ),فيتامين (ه) ,فيتامين (ب) ,فيتامين (ب١٢) و الفولات كالتالى (١٩٩٣.٨٩ ميكروجرام , ٢٠.٦٨ميكروجرام , ٢.٢٨مجم , ٢.٨ميكرجرام , ٢١٩.٤مجم) والنسب المئوية هى (٢٤٩.٢٤% , ٢٥٨.٥% , ١٧٥.٣٥% , ١٤٠% , ١٢١.٨٩%) .