International Journal of Multidisciplinary and Current Research ISSN: 2321-3124
Research Article Available at: http://ijmcr.com

Knowledge and practice of dietary habits and healthy lifestyle among sample of clients above 18 years old attending primary healthcare centers in Baghdad

Maha Faeq Majeed[#] FICMS (FM), MB. ChB., Hazim Mohammed Khudhair* FICMS(ENT), CABS(ORL-HNS), MB.ChB., Wasan Jasim Mohammed[#], FICMS (FM) and Hala Kahtan Khalf[#], MB. ChB.

*Al-Salam PHCC of Family Medicine, Baghdad, Iraq
[#]Medical City Complex; Ghazi Al-Hariri Surgical Specialties Hospital, Baghdad, Iraq

Accepted 26 Oct 2016, Available online 30 Oct 2016, **Vol.4 (Sept/Oct 2016 issue)**

Abstract

Background: *Nutrition is an important factor for promoting and maintains health and it depends on the quality and the type of food. Knowledge and practice of dietary habits play an essential role in preventing the morbidity and mortality of non-communicable diseases.*
Aims: 1.*To assess the knowledge and practice of dietary habits and healthy lifestyle among clients above 18 years attending PHCCs in Baghdad.* ***2.*** *To show the statistical significant association between the sociodemographic characteristics and knowledge and practice of clients about healthy lifestyle and dietary habits.*
Design: *Cross sectional study was done from beginning of February to end of April 2016. Convenient sample (300 clients) was participated. The questionnaire was filled by direct interview with the participants asking them about the knowledge and practice of diet and lifestyle. P-value <0.05 was considered statistically significant.*
Results: *From (300) participants (85%) of them have good knowledge score. There was statistically significant association between knowledge and gender, educational level, occupation and the residence. The practice of the clients was poor, about (11%) of them have good score and there is no statistical significant association between the sociodemographic characteristics of the clients and the practice of them toward dietary habits and healthy lifestyle.*
Conclusion: *Three quarters of the participants have good knowledge while only small portion (less than one quarter of them) have good practice. Thus there was high statistical significant association between the sociodemographic characteristics of the clients and the knowledge, while there was no statistical significant association between them and the practice.*

Keywords: *Dietary habits etc.*

Introduction

Nutrition is the process of taking food and using it for growth, development and repair to produce energy source to whole the body during doing any daily activity[(1)]. The dietary habits and nutritional knowledge are very important for human to gain a healthy life style. Lack of nutritional knowledge can lead to poor eating habits which can affect body health and daily performance [(2)]. Nutrients are substances that must be supplied by the diet because they are not synthesized in the body in sufficient amount and can be classified into macronutrients and micronutrients[(3)]. There have been considerable changes in human life style all over the world especially in the recent years. Nowadays processed food are rapidly replacing organic food. Aanother change is rapid increase in the number of restaurants and people tendency to eat fast food[(4)]. Many studies show that not keeping healthy diet, decrease in physical activity and not having sufficient nutritional knowledge lead to issues such as health problems, over weight and obesity. Obesity itself leads to cardiovascular diseases, increase in blood pressure, increase in blood cholesterol and diabetes [(5)]. According to the World Health Organization in 2014, more than 1.9 billion adult 18 years and older were overweight, of these 600 million were obese. The world wide prevalence of obesity more than doubled between 1980 and 2014[(6)]. In order to have a good health, people need to eat different types of food in different amount during the day, so they can follow My Pyramid in their food choice[(7)].

Patients and methods

1. Setting and time: *Study design: Descriptive cross sectional study was conducted over a period from the beginning of February to the end of April 2016, as (2-3) days/week at:

(1) Al-Zahraa primary health care center of family medicine.
(2) Al-Salaam primary health care center of family medicine.
(3) Al-Gazalyia primary health care center.
(4) Bab Al-Muadam primary health care center of family medicine.
(5) Al-Mustensria primary health care center of family medicine.
*Sampling and sampling size: Convenience sampling involve (330) clients,(30) refused, the responders were(300).
*Inclusion criteria: All clients attending the PHCCs above 18 years old were invited to the study.
*Exclusion criteria: - Any pregnant and lactating female.
- Who refuse to participates.

2. Data collection: Data was collected using self-administered questionnaire evaluated by two seniors of community medicine in Al-Nahrain medical college, depending on direct interviewing for each participants.

3. The questionnaire: included;

*General demographic information: age, gender, residence, educational level, occupation, occupational nature, working hours, presence of any chronic diseases, weight, height and BMI (body mass index).
*Questions to assess the knowledge of the clients about the healthy lifestyle and dietary habits.
*Questions to assess the practice of the clients about the lifestyle and dietary habits.
Each interview required about (10-15) minutes to be completed.
At the end of each interview, the participant was thanked for (his, her) cooperation.
4. Pilot study: Twenty clients participated in a pilot study, but they were not included in the studied sample.

5. Statistical analysis: Each client assigned as serial identification number, the data was analyzed using (SPSS) version 20.

6. Ethical considerations: Oral consent was obtained from each participant. Permission was obtained from each center where the information gathering.

7. Limitation of the study

1) The study was conducted in five PHCCs that chosen for convenience.
2) Our study was limited by measuring specific people (PHCCs visitors).
3) There is shortage time for data collection.

Results

Table 1 Socio-demographic characteristics

Characteristics	Frequency (300)	Per cent (100%)
Age categories		
≤25 years	73	24.3
26-35 years	75	25.0
36-45 years	57	19.0
46-55 years	41	13.7
55+ years	54	18.0
Mean±SD (Range)	**39.3±15.7**	**(18-77) years**
Gender		
Male	138	46
Female	162	54
Education level		
Read &write	16	5.3
Primary school	40	13.3
Intermediate school	28	9.3
Secondary school	69	23
College	120	40
Post-graduates	27	9
Marital status		
Single	94	31
Married	13	57
Widow or divorced	33	11

Table 2 Occupation details

Variables	Frequency (300)	Per cent (100%)
Occupation		
Unemployed	127	42.3
Students	16	5.3
Non-government	61	20.3
employee	96	32
Government employee	300	100
Total		
Nature of occupation		
Light	100	57.8
Medium	52	30.1
Heavy	21	12.1
Total	173	100
Working hours, Mean±SD (Range)	7.4±2	(1-14) hours

Table 3 Body mass index

BMI Categories	Frequency (300)	Per cent (100%)
18.5-<25 kg/m2 (Normal)	79	26.3%
25-<30 kg/m2	118	39.3%
(Overweight)	90	30%
30-<35 kg/m2 (Obesity I)	9	3%
35-<40 kg/m2 (Obesity II)	4	1.3%
40+ kg/m2 (Obesity III)	28±4.2	(18.7-42.2)
Mean±SD (Range)		kg/m2

Table 4 History of chronic diseases

Variables	Frequency (300)	Per cent (100%)
Do you complain of chronic disease?		
Yes	56	18.7
No	244	81.3
Type of chronic disease		
Hypertension	40	71.4
Diabetes Mellitus	13	23.2
Hypercholesterolemia	1	1.8
Cardiovascular diseases	2	3.6

Table 5 Answers for the questions testing knowledge of healthy diet habits

Questions	Answers	Frequency300	Percent 100%
What is the most important meal in the day?	**Breakfast**	155	51.7
	Lunch	134	44.7
	Dinner	11	3.7
What is the main food source of energy?	Fat	75	25
	Proteins	105	35
	Carbohydrates	120	40
What is the most healthy to be drink with breakfast?	Tea	128	42.7
	Coffee	11	3.7
	Natural Juices	161	53.7
What is the most healthy bread choice?	White bread	70	23.3
	Whole grain bread	143	47.7
	No differences	87	29
What is the most healthy meat choice?	**White meat**	185	61.7
	Red meat	36	12
	No differences	79	26.3
What is the healthiest fat choice?	Fat	20	6.7
	Vegetable oil	205	68.3
	Margarine	37	12.3
	No differences	38	12.7
How many cups of water is the person daily need?	4 cups	23	7.7
	6 cups	98	32.7
	8 cups or more	179	59.6
Fat-free products are :	**Healthy**	187	62.3
	Unhealthy	33	11
	No differences	80	26.7

The right answers are in bold

Table 6 Knowledge about the exercise and sleeping hours

Questions	Answers	Frequency300	Percent 100%
What are the average weekly needed hours for exercise?	1 hour	36	12
	2 hours	119	39.7
	3 hours or more	145	48.3
Daily needed sleeping hours	<6 hours/day	17	5.7
	6 - 8 hours/day	167	55.7
	8 - 10 hours/day	107	35.7
	>10 hours/day	9	3

The right answers are in bold

Table 7 Answers for the questions testing knowledge about healthy habits

Questions	Answers	Frequency300	Percent 100%
Is it healthy to reduce salt in food?	**Yes**	284	94.7
	No	16	5.3
Is it healthy to reduce fat in food?	**Yes**	292	97.3
	No	8	2.7
Is it healthy to increase daily vegetables & fruits servings?	**Yes**	269	89.7
	No	31	10.3
Is it healthy to increase sport exercises?	**Yes**	259	86.3
	No	41	13.7
Is it healthy to maintain body weight?	**Yes**	283	94.3
	No	17	5.7
Is it healthy to be not smoker?	**Yes**	271	90.3
	No	29	9.7

The right answers are in bold

Table 8 Answers for the questions assessing dietary practice

Questions	**Answers**	**Frequency300**	**Per cent 100%**
Do you eat three meals per day?	**Yes**	209	69.7
	No	91	30.3
If no why?	No time	30	33
	Weight reduction	33	36.3
	Other reasons	28	30.8
How many servings do you eat carbohydrates per day?	1 servings/day	162	54
	2 - 3 servings/day	117	39
	6-11 servings/day	21	7
How many servings do you eat fruits per day?	Nil	77	25.7
	1 servings/day	153	51
	2 - 3 servings/day	67	22.3
	≥4 servings/day	3	1
How many servings do you eat vegetables per day?	1 servings/day	180	60
	2 - 3 servings/day	100	33.3
	3-5 servings/day	20	6.7
How many servings do you eat proteins per day?	Nil	56	18.7
	1 servings/day	216	72
	2 - 3 servings/day	26	8.7
	≥4 servings/day	2	0.7
How many servings do you have milk & dairy products per day?	Nil	58	19.3
	1 servings/day	185	61.7
	2 - 3 servings/day	55	18.3
	≥4 servings/day	2	0.7
What type of oil or fat is most often used for meal preparation in your household?	**Vegetable oil**	224	74.7
	Margarine	68	22.7
	Fat	8	2.7

The right answers are in bold

Table 9 Answers for the questions assessing salt intake

Questions	**Answers**	**Frequency300**	**Per cent 100%**
Do you add table salt for your meal?	Yes	180	60
	No	120	40
According to your estimation, your daily salt intake is:	Too much	44	14.7
	Appropriate	161	53.7
	Too little	77	25.7
	Far too little	18	6.0

Table 10 Answers of the questions to assess practice about fast food and soft drinks

Questions	**Answers**	**Frequency300**	**Per cent 100%**
On average, how many meals per week do you eat that were not	Nil	124	41.3
	1 time/week	97	32.3
	2 - 3 times/week	43	14.3
		36	12

prepared at a home?	≥4 times/week		
Do you have snacks?	Yes No	226 74	75.3 24.7
If yes, what are these snacks?	Biscuit Chips Nuts Ice-cream Sweets Fruits &vegetables Others Total	58 53 34 5 23 41 12 226	25.7 23.5 15 2.2 10.2 18.1 5.3 100
How many times do you drink soft drinks & juices per day?	Nil 1times/day 2 - 3 times/ day ≥4 times/ day	82 144 72 2	27.3 48 24 0.7

Table 11 Answers for the questions assessing practicing of exercises & healthy sleeping

Questions	Answers	Frequency300	Per cent 100%
Are you doing exercise?	**Yes** No Total	**124** 176 300	**41.3** 58.7 100
If yes, mention the exercise intensity	Light **Moderate** Intense Total	69 **42** 13 124	55.6 **33.9** 10.5 100
How many hours do you training per week?	1 hour/week **2 - 3 hours/week** ≥4 hours/week Total	58 **54** 12 124	46.8 **43.5** 9.7 100
If you don't train, why?	No time No support No reasons Other reasons Total	62 36 63 15 176	35.2 20.5 35.8 8.5 100
How many hours do you sleep per day?	<6 hours/day **6 - 8 hours/day** 8 - 10 hours/day >10 hours/day Total	49 **160** 80 11 300	16.3 **53.3** 26.7 3.7 100

The right answers are in bold

Table 12 Answers for the questions assessing practicing of social habits

Questions	Answers	Frequency300	Per cent 100%
Are you smoker?	Yes No	74 226	24.7 75.3
How long did you smoke? Median (Range)		5 (1 – 30) years	
Number of cigarettes per day? Median (Range)		15 (2 – 40) cigarettes	
Do you drink alcohol?	Yes No	5 295	1.7 98.3

Table 13 Comparison of healthy diet knowledge scores among the main socio-demographic characteristics

Variables	Knowledge about healthy diet No. (%)		Total No.=300	Test	p-value
	Poor No.=45	Good No.=255			
Age group ≤25 years 26 - 35 years 36 - 45 years 46 - 55 years >55 years	8 (11.0%) 10 (13.3%) 9 (15.8%) 8 (19.5%) 10 (18.5%)	65 (89.0%) 65 (86.7%) 48 (84.2%) 33 (80.5%) 44 (81.5%)	73 (100.0%) 75 (100.0%) 57 (100.0%) 41 (100.0%) 54 (100.0%)	2.305	0.68
Gender Male Female	34 (30.1%) 31 (19.1%)	104 (69.9%) 131 (80.9%)	138 (100.0%) 162 (100.0%)	4.725	0.030*
Education level Read&write Primary sch. Intermediate sch. Secondary sch. College Post-graduates	3 (18.8%) 10 (25.0%) 9 (32.1%) 14 (20.3%) 8 (6.7%) 1 (3.7%)	13 (81.2%) 30 (75.0%) 19 (67.9%) 55 (79.7%) 112 (93.3%) 26 (96.3%)	16 (100.0%) 40 (100.0%) 28 (100.0%) 69 (100.0%) 120 (100.0%) 27 (100.0%)	20.52	0.001*
Marital status Married Not married	30 (17.3%) 15 (11.8%)	143 (82.7%) 112 (88.2%)	173 (100.0%) 127 (100.0%)	1.757	0.185
Occupation Unemployed Students Non-Gov. employee	32 (25.2%) 0 (0.0%) 10 (16.4%)	95 (74.8%) 16 (100.0%) 51 (83.6%)	127 (100.0%) 16 (100.0%) 61 (100.0%)	23.891	<0.001*
Nature of occupation Gov. employee Occupational Clerk Hard works	3 (3.1%) 5 (5.0%) 3 (5.8%) 5 (23.8%)	93 (96.9%) 95 (95.0%) 49 (94.2%) 16 (76.2%)	96 (100.0%) 100 (100.0%) 52 (100.0%) 21 (100.0%)	9.161	0.010*
Body mass index groups Normal Overweight Obese	8 (10.1%) 11 (9.3%) 26 (25.2%)	71 (89.9%) 107 (90.7%) 77 (74.8%)	79 (100.0%) 118 (100.0%) 103 (100.0%)	12.931	0.002*
Complain of chronic disease Yes No	9 (16.1%) 36 (14.8%)	47 (83.9%) 208 (85.2%)	56 (100.0%) 244 (100.0%)	0.062	0.803

[b] **Fisher's exact test**

***Significant at 0.05 level by chi-square test**

Table 14 Comparison of healthy diet Practicing scores among the main socio-demographic characteristics

Variables	Knowledge about healthy diet No. (%)		Total No.=300	Test	p-value
	Poor No.=267	Good No.=33			
Age group ≤25 years 26 - 35 years 36 - 45 years 46 - 55 years >55 years	65 (89%) 68 (90.7%) 51 (89.5%) 38 (92.7%) 45 (83.3%)	8 (11.0%) 7 (9.3%) 6 (10.5%) 3 (7.3%) 9 (16.7%)	73 (100.0%) 75 (100.0%) 57 (100.0%) 41 (100.0%) 54 (100.0%)	2.565	0.633
Gender Male Female	124 (89.9%) 143 (88.3%)	14 (10.1%) 19 (11.7%)	138 (100.0%) 162 (100.0%)	0.191	0.662
Education level Read& write Primary sch. Intermediate sch. Secondary sch. College Post-graduates	16 (100%) 37 (92.5%) 23 (82.1%) 64 (92.8%) 104 (86.7%) 23 (85.2%)	0 (0.0%) 3 (7.5%) 5 (17.9%) 5 (7.2%) 16 (13.3%) 4 (14.8%)	16 (100.0%) 40 (100.0%) 28 (100.0%) 69 (100.0%) 120 (100.0%) 27 (100.0%)	5.885	0.318
Marital status Married Not married	150 (86.7%) 117 (92.1%)	23 (13.3%) 10 (7.9%)	173 (100.0%) 127 (100.0%)	2.198	0.138
Occupation Unemployed Students Non-Gov. employee	113 (89%) 14 (87.5%) 56 (91.8%)	14 (11.0%) 2 (12.5%) 5 (8.2%)	127 (100.0%) 16 (100.0%) 61 (100.0%)	0.747	0.862
Nature of occupation Gov. employee Occupational Clerk Hard works	84 (87.5%) 87 (87%) 46 (88.5%) 21 (100%)	12 (12.5%) 13 (13.0%) 6 (11.5%) 0 (0.0%)	96 (100.0%) 100 (100.0%) 52 (100.0%) 21 (100.0%)	3.024	0.221
Body mass index groups Normal Overweight Obese	69 (87.3%) 106 (89.8%) 92 (89.3%)	10 (12.7%) 12 (10.2%) 11 (10.7%)	79 (100.0%) 118 (100.0%) 103 (100.0%)	0.316	0.854
Complain of chronic disease Yes No	48 (85.7%) 219 (89.8%)	8 (14.3%) 25 (10.2%)	56 (100.0%) 244 (100.0%)	0.759	0.384

b Fisher's exact test, others by chi-square test

Discussion

Dietary habits are the major reason for changing lifestyle. Good nutritional knowledge can increase the public awareness of the relationship between health and nutrition that leads to healthy dietary practice and lifestyle.

Demographic characteristics

(68.3%) of the participants were (18 – 45) years old, (54%) females, (57.7%) married, (42.3%) unemployed, (91.3%) from urban area and (40%) with college educational level. This may be due to the fact that most of the PHCCs visitors from the housewives as they are the main caregivers of their children so they visit more frequently the PHCCs than males as they are busy with work and do not have time to go to PHCCs. About (81.3%) of them don't have chronic diseases, may be due to their age categories and those with chronic diseases visit the hospitals more frequently than the PHCCs.

Knowledge about healthy dietary habits and lifestyle

This study showed that the overall knowledge of the adults people above 18 years on health issues about diet, lifestyle and exercise was good, about more than three quarter of the participants show good knowledge and less than one quarter of them show poor knowledge, these results were in agreement with studies done by Lamia et al in Baghdad 2014[8], Sajwani *et al* in Pakistan 2009 [9] and Ana et al in Serbia 2012 [10].

In this study we found that about half of the participants knew that the important meal in the day is the breakfast, the carbohydrates is the main source of energy, and 95% of them knew that it is important for healthy diet to decrease fat in food, decrease daily salt intake, increase daily consumptions of fruits and vegetables, increase daily water intake. These findings were in agreement with study published by National Obesity Observatory in England 2008 [11] and study done by Lucy et al in Nairobi 2013[12], this could be attributed to the growing of the information technology that enable people to get information easily.

While different findings in study done by Wajtas et al in Polish 2012[13] as they found that there is poor knowledge about the source of energy, importance of breakfast, fruits and vegetables.

Regarding the physical activity we found that (48%) of the participants knew the recommended level of needed exercise and sleeping hours, this was in agreement with study published by National Obesity Observatory in England 2008[11] with lower percentage.

We found that the females have more good knowledge than the males, and the association was significant between knowledge and gender. These results were in agreement with studies conducted by Sajwani *et al i*n Pakistan 2009[9] and Nola et al in Croatia 2006[14] and

Stock et al in German 2008[15] as they found that the females has more information about diet and healthy choices of food as they are the caretaker of the family. While they were in disagreement with Ana et al in Serbia 2012[10] as they found that there is no difference between males and females regarding their knowledge level.

The present study showed that those who are overweight and obese have high knowledge level, (90%) of the overweight and (74%) of the obese show good knowledge level, and the association was significant between BMI and knowledge. This finding was in agreement with study published by National Obesity Observatory in England 2008[11], this may be due to that people with high BMI are more interested about diet and more looking for healthy food choices in order to lose weight.

Practice about healthy dietary habits and lifestyle

The overall practice of the participants was disappointing, about more than three quarter of them have unhealthy practice, while the reminder small portion have healthy practice .This result in agreement with studies done Lamia et al in Baghdad 2014[8], Hassaan et al in Saudi Arabia 2011[16], Motko et al in Japan 2002[17]. This may be indicated that there is large gap between the knowledge of people and their practice toward healthy eating and lifestyle.

We found that there is decrease in the daily consumptions of fruits and vegetables also decrease in consumption of milk and dairy products. Only (23%) had more than 2 servings of fruits, (6%) of them has more than 3 servings of vegetables and (18%) had more than 2 servings of milk and dairy products, this similar to other studies done by Lucy in Nairobi 2013[12], Zahra et al in Iran 2015[18] and study published by central health education unite in Hong Kong 2002[19]. While different findings to study done by Lamia et al in Baghdad 2014[8] about half of their sample eat fruits and vegetables in a good frequency.

In the current study about half of the participants have unhealthy snacks, as they snack on chips and biscuits, have soft drinks and artificial juices 1 time/day and have fast food about (1–4) times/week, this agrees with study done by Lucy et al in Nairobi 2013[12] and Zahra et al in Iran 2015[18] this may be due to the preference of the taste of these types of foods over the others and the availability of them due to increase in the distributions of supermarkets and the restaurants.

About the recommended level of physical activity less half of our sample have the recommended level of physical activity, this result similar to studies conducted by Lamia et al in Baghdad 2014[8], Hassan et al in Saudi Arabia 2011[16] and study published by central health education unite in Hong Kong 2002[19]. This may be attributed to that people are not aware that maintenance of the physical activity play important role in the improvement of health or may be they don't have encouragement for doing it.

In our study about one quarter of the participants were smokers and only two percent were alcoholic, while in study done by Lucy et al in Nairobi 2013[12] (64%) of their sample was alcoholic. This finding explained by the nature of our society and the religious considerations of it.

The main barriers for healthy practice like skipping meals, irregular exercise include lack of time, weight reduction, lack of support. This is similar to other studies done by Lamia et al in Baghdad 2014[8], Loan et al in California 2013[20] and Daskapan et al in Turkey 2006[21] where lack of time is the main barrier for heathy diet, skipping meals and irregular exercise.

Conclusions

1) The adult people in general have good level of knowledge regarding the healthy dietary habits and lifestyle.
2) The overall practice of the people was poor, about more than three quarters of them have poor score , and only small portion of them have good score.
3) We found that the health related behaviors of the participants show several unhealthy related dietary habits including skipping meals, decrease in the daily intake of fruits and vegetables, daily intake of soft drinks and artificial juices, snacks on food rich in fat and sugar, irregular exercise and smoking.
4) We found that only 26.3% of the participants have normal weight, 39.3% overweight and 34.3% obese.
5) Despite the higher level of knowledge, people cannot conduct this knowledge into healthy practice.
6) We found that there is high statistical significant association between the sociodemographic characteristics and knowledge of people about healthy dietary habits and lifestyle.
7) While there is no statistical significant association between the sociodemographic characteristics and the practice of people toward healthy lifestyle and dietary habits.

References

[1]. Amanat A, Muhammad SA, Mostafa IW and Hashem AK. Assessment of Nutritional Knowledge, Dietary Habits and Nutrient Intake of University Students Athletes , Oman. Pakistan Journal of Nutrition 2015 ; 14(5):293–299 .

[2]. Johnna DW Yer. Nutritional Requirements And Dietary Assessment. Anthony S.Fauci, Engene B, Dennis LK, Dan L.L, J. Larry J, Stephen L.H, Josphen L . Harrisons Principles Of Internal Medicine .17th edition. MC Graw Hill Campanies . United States of America ; 2008:437–438 .

[3]. Hargove JL, Webb P, Rumpler W. Carolyn D.Berdanier, Janos Z. Advanced Nutrition Macronutrients, Micronutrients, and Metabolism . Taylor & Francis Group. London ;2009 : 1 -22 .

[4]. Rafi B, Eyad A, Bushra F, Norah A . Comprative Study Of Knowlegde And Attitude, Practice Of Nutritional And Non nutritional Students Toward Balanced Diet. IOSR Journal of Nursing And Health Scince.2013; 2(3): 29–36.

[5]. WHO obesity and overweight in 2014 .Media center. January 2015. viewed 27 March 2016 at http://www.whoint media center .fact sheet

[6]. Graham Faiella. The Food Guide Pyramid. In: The Food Pyramid and Basic Nutrition. 1st edition. Rosen central. New York;2005, 25–32.

[7]. Lernmer CM, Sloan AF, Rozin P. Food choices, nutrients and nourishments. Davis CA , Brecher SJ.Nutrition guidelines . In :Paul I, R.Elaine T , Dan R . Discovering Nutrition . 2nd edition . Jones and Barlett .Boston , London ;2006,5–40.

[8]. Lamia DhiaA , Ban Faud I . Knowledge and practice of dietary habits and healthy lifestyle among medical and nonmedical students in Baghdad, Iraq . Middle East Journal of Family Medicine. Apr 2014; vol.12.issue 3, p37–47.

[9]. Sajwani R A, Shoukat S, Kaza R, Muhyeuddin M, Rashid Q, Saulat M, Panju S. Knowledge and practice of healthy lifestyle and dietary habits in medical and nonmedical students of Karachi , Pakistan . Journal of Pakistan Medical Association .Sep 2009;59(9) :650–5.

[10]. Ana D. Jovicic .Healthy Eating Habits Among Population of Serbia :Age and Gender Differences . J Health popular NUTR . Mar 2015 ;V33 , no.1

[11]. Active people survey 2008, British social attitude survey 2008. Knowledge and attitude towards healthy eating and physical activity in England .National obesity observatory May 2011; 7–16

[12]. Lucy Wanja K. Association Of Nutrition Knowledge And Attitude With Diet, Practice And Nutritional Status Of Female Undergraduate Students Attending University College Within Nairobi Metropolis, Kenya. Department of food science, nutrition and technology.2013; 49-51.

[13]. Wojtas M, Kollajti sD. Level Of Knowledge Of Food And Nutrition Among Groups Of Puplis Of The Last Class Of Secondary Schools. Polish. US National Library of Medicine, National institute of Health. 2012; 63(2): 213-7.

[14]. Nola IA, Jelinic JD, Matanic D, Cvtkovie JP, Markovie BB and Senta A. Differences in eating and lifestyle habits between first and sixth year medical students from Zagreb in Croatia. 2006;1289-1294.

[15]. Stock C, Wille L, Kramer A . Gender–specific health behaviors of German university students predict the interest in campus health promotion. Health promotion international, 2002 ; 145 – 154 .

[16]. Hassaan MA, Nada AA, Hana IA, Dina MQ and Abdularhman OM . Physical activity , sedentary behaviors and dietary habits among Saudi adolescents relative to age , gender and region . International Journal Of Behavioral Nutrition and Physical Activity 2011;8:140.

[17]. Motko A , Kayoko S, Keiko E, Keiko K, Naomi Y, Yoko K. (The relationship among eating habits and oral health status of students). Kokybyo Gakkai Zasshi Journal(Article in Japanese) 2003; 69:290–5

[18]. Zahra M, Azam H, Iman S and Khadieh A. The study of Knowledge, Attitude And Practice Of Secondary School Students In Darab City, Fars Province. Iran in 2011-2012. Int. Journal of school and health. Published on April 2015;2(2)e25702.

[19]. The University Of Hong Kong Social Sciences Research Centre. A qualitative Study On Dietary And Exercise Practice Of People In Hong Kong. Central Health Education Unite. Department of Health. July, 2005 ;3–5.

[20]. Loan Pham K, Gail G Harrison, Marjorie K. Perception of Diet and Physical Activity Among California Hmong Adult and Youths . Preventing Chronic Disease. Public Health Research, Practice And Policy. V4: no.4 Oct. 2007; 9–10.

[21]. Daskapan A, Tuzun EH and Esker L. Perceived Barriers to Physical Activity in University Students. Journal of Sports Science and Medicine. 2006; 5, 615–620 .