Assessment of Nutrition Pattern among Nursing Students at Misurata University

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Abstract

Good nutrition pattern reflects a healthy and nutritionally balanced diet to ~~help~~ promote health and prevent chronic diseases for current and future generations. This ~~present~~ study was conducted to assess dietary patterns and eating behavior among nursing students at Misurata University; also, to clarify the relationship of hemoglobin level with gender, Body Mass Index (BMI), dietary patterns and eating behavior. Sixty-one students aged 18-30 years old were selected randomly. Pearson correlation was used to find out a correlation of hemoglobin with measured parameters. The results showed a significant ($P<0.05$) correlation of hemoglobin level with regular breakfast intake, practice tea and coffee intake immediately after meal. There was no significant ($P>0.05$) correlation of hemoglobin level with gender, BMI, fast meal and animal products intake. Some negative food habits were observed among participants, such as skipping breakfast and eating fast meals many times during a week. The majority of students didn't eat enough rich heme iron foods such as fish, eggs and red meat. Also; many students were not eating a wide variety of foods frequently. The results ~~also~~ revealed that, the majority of participants have consumed many servings of dairy products on daily bases in replacement of meat, fruits and vegetables. This may be due to community dietary habits or cultural and economic factors. The nutrition awareness is necessary to gain healthy lifestyle, desirable dietary habits including all food groups, as well as regular breakfast and physical exercise.

Key words**:** Nutrition assessment, hemoglobin, Misurata, nutrition patterns, students.

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Introduction

Health is one of the most important needs of a community for its development, progress and stability. Eating habits during infancy, childhood and adolescence, when rapid growth and development processes take place, is important for an individual's adequate, balanced and healthy diet. Eating habits of the young community, which will be an important human resource of the future are not well known (Orak et al., 2006), The school-based nutrition education is effective in reducing or preventing overweight and obesity in children and adolescents (Silveira et al., 2011). It is found that, interventions in schools to reduce overweight and obesity, as well as to increase fruits and vegetable consumption, have demonstrated effectiveness in the best-conducted studies. The information provided on foods and nutrition is not always understood well by young community. Therefore, ways in which information is communicated have to be considered very carefully (Sanco, 2011; Sovyanhadi and Cort, 2004).

The lifestyle affects dietary habits and could have important consequences for the health of university students. It would be desirable, therefore, for the media to make greater efforts to promote good eating habits, and for nutritional education programs to be activated within the university, taking the Mediterranean diet as a model (Francesco et al., 2013).

The Mediterranean diet is widely recognized as satisfying the requirements of healthy nutrition, it is originally based upon the dietary habits of communities, their diet may be pictured as a pyramid which represents food types and frequency of consumption such as high intake of vegetables, pulses, fruits and cereals; medium-high intake of fish; low intake of meat and saturated fat; olive oil as the principal fat and medium-low intake of dairy products (Bonaccio et al., 2012).

The objectives of this study were to:

1) Assess dietary patterns and eating behavior among students of nursing and health sciences at Misurata University.
2) To compare dietary habits with gender and age groups.
3) To elucidate correlation-ship of hemoglobin level with gender, BMI, dietary habits.

Materials and Methods

Research Design

The cross section, descriptive study was used to evaluate the nutrition patterns amongst nursing students, and aware students which is good eating behavior need to prevent malnourishment and maintain their health. The survey conducted for student in Faculty of Nursing and Health Sciences, it was included general information and dietary habits.

Study population

All of the participants were informed about the purpose of the study, procedures, and signed the study consent forms. The study proposal was approved by the department board, and all procedures were followed in accordance with the ethical standards of the Misurata University.

Participant eligibility was determined through the following inclusion criteria:

1) student at Faculty of nursing. 2) non alcoholism and nonuser of tobacco products. 3) apparently health. 4) not pregnant or lactating in the past 6 month. 5) not clinically diagnosed with an eating disorder. 6) no metabolic, hormonal, and/or neural conditions, diseases, or medications that influence metabolism or food intake. 7) no known bleeding disorders.

Study duration

The study was conducted within six months. April up to end of December 2018. The duration was distributed among data collection, analysis and interpretation and report writing.

Data collection and procedures

1) Questionnaires

Well-structured questionnaire was prepared and distributed among student of Nursing and Health Sciences. The interview was conducted face to face before take the blood samples for Hemoglobin analysis.

2) Anthropometric data

The weight and height of each respondent was recorded. The anthropometric data was collected then BMI was calculated using procedure stipulated for anthropometric measurements and evaluation (WHO, 2004).

3) Blood samples collection and preparation

The 61 blood samples were collected during study period. Only one blood sample was drawn out from each participant. 2.5 ml of blood sample was drawn out into an anticoagulant tube and caped loosely. Each tubes containing a 2.5 (EDTA) Ethylene Di Amine Tetra Acetic Acid. All blood samples were immediately transferred to laboratory for analysis.

Blood analysis

In laboratory, 61 of EDTA blood samples were used to analyze complete blood count (CBC). The analysis was done using Sysmex Automated Hematology Analyzer device (KX-21N-2012) made in German. Respondents were classified to categories according hemoglobin level.

Statistical analysis

To perform calculations for statistical analysis, SPSS Statistical Version 18 and Graphs were used. Descriptive statistical methods: represented in the Frequency and Percent as well as Pie Chart. Pearson Correlation was used to evaluate the relations between the two variables of study. The relationship between two variables is significant if P-value is less than 0.05 (Kirkpatrick and Feeney, 2009).

Results and Discussion

General information

As it is shown in table (1). The distribution of study population according to ages groups, the result was indicated, the majority of respondents 74%, whose were attributed to ages group (18-20). Whereas, other students age group (21-30),

whose were recorded 26%. When distributed samples according to gender, the majority of respondents are male, they were 52% compared to female 48%. There was not significantly (P>0.05) correlation of hemoglobin level with gender among students.

Table (1). classification of participants with age group and gender.

Age group	Frequency	Percent(%)
18-20	45	74
21-30	16	26
Total	61	100
Distribution of study sample by gender		
Male	32	52
Female	29	48

Table (2) shows classification of participants into the different categories according to BMI, the result revealed that majority 47% of the males were normal index. While, whose overweight were 19%. Regarding classification of female according BMI, the result revealed that the majority 52% of the female were normal index. While, female whose overweight were 28%. The relationship of hemoglobin level with BMI among study participants, thus show in table (3). The results revealed that there is not significant (P>0.05) correlation (r = 0.165) of hemoglobin level with BMI among participants in current of study. There was a significant negative correlation of blood Hemoglobin level with BMI and body fat percent. Hence, increase in body fat level may be considered as an indicator of lower Hb level (Schrier, 2014). The studies were carried out on women for more than 60% in reproductive ages versus only 15% in women aged 50 to 74; it was seen the iron deficiency anemia is most prevalence among younger women (Gibson et al., 2008).

Table (2). Classification of Participants with BMI.

BMI Classification	Male Percentage %	Female Percentage %
Mild thinness	9	3
Normal range	47	52
Overweight	19	28
Obese class I	16	3
Obese class II	3	7
Obese class III	6	7

Table (3). The relationship between Hemoglobin (Hb) with BMI.

	All Sample	Male	Female
Pearson Correlation	0.165	0.192	0.328
P-value	0.205	0.293	0.082
N	61	32	29

(P<0.05) indicates a significant correlation between two factors

Dietary assessment

In table (4), the participants were classified, whose were usual eating breakfast regularly or not, the results showed the majority 66% of students were skipped breakfast. while 34% of students were eating breakfast regularly. This may be attributed to faculty duty begin early morning, that can effect on a student's dietary system, which might be let many students skipped or delayed breakfast, students who don't eat breakfast regularly, they could not get a chance for eating until later of daylight. If students spent morning entire as hunger, they have more likely to do negative effect on their health. The early detection of anemia throughout dietary assessments and simple blood tests, followed by effective intervention, ensures all boys will be healthy and ready to learn (Özdemir, 2015).

Table (4). who are practice regular intake breakfast.

Intake breakfast regularly	Frequency	Percent(%)
Yes	21	34
No	40	66
Total	61	100

The relationship of hemoglobin with breakfast intake among students as shown in table (5), the results revealed that a significant (P<0.05) correlation (r = 0.303) of hemoglobin with breakfast intake among participants. Without an adequate breakfast, they will not be able to concentrate or pay attention then owing of poor cognitive. This finding closed to impaired nutrient status can make immune responses, making them more susceptible to common illnesses (Özdemir, 2015).

Table (5). The relationship of Hb with regular breakfast intake.

	All Sample	Male	Female
Pearson Correlation	0.303	0.330	0.129
P-value	0.018	0.065	0.505
N	61	32	29

N: number of population study

The distribution of participants, whose eat fast meals, the results showed the majority 84% of students were consumed fast meals compared to 16% of students were didn't eat fast meals as shown in table (6). The students were aware of the risks associated with fast food consumption on health; however, their eating habits did not indicate they practiced what they knew could be harmful to their health, especially when they were socializing with friends (Sam et al., 2011).

Table (6). who are eat fast meals?

Do you eat fast meal	Frequency	Percent
Yes	51	84%
No	10	16%
Total	61	100%

The percentage of participants, those who were drink coffee or don't practice, the results showed the higher proportion of students, who had like intake coffee daily were 56% compared to 33% of students, those who had not practice coffee. However, the results demonstrated that, not significant ($P<0.05$) correlation of hemoglobin level with students whose practiced coffee intake, as show in table (7) and (8). It is beneficially avoidance certain foods that can inhibit iron absorption when eaten in large amounts. These include tea and coffee and foods high in calcium such as dairy products and whole-grain cereals (Mc Lean and Eglil, 2009).

Table (7). who are drink tea and coffee Frequently

	Daily		3-4 times weekly		Weekly		None	
	F	P	F	P	F	P	F	P
Tea	14	23%	2	3%	2	3%	43	70%
Coffee	34	56%	3	5%	4	6%	20	33%

The classification of participants, those were drink tea immediately after meal or never practices drink tea ever, as shown in table (7), the results indicated that less proportion 30% of students, those who intake tea immediately after meals compared to 70% of students, who didn't practice drink tea immediately after meal, the results demonstrated that, a significant ($P<0.05$) correlation of hemoglobin level with those had practiced intake tea immediately after meal.

Table (8). The relationship of Hb with drink tea after meal.

Variables	Analysis	All Sample	Male	Female
Tea	Pearson Correlation	0.288	0.228	0.108
	P-value	0.024	0.209	0.577
Coffee	Pearson Correlation	0.184	0.015	0.036

	P-value	0.156	0.934	0.852
N		61	32	29

(P<0.05) indicates a significant correlation between two factors

Table (9) shows distribution of participants according to food frequency intake daily, times weekly, monthly or never intake. The results showed that the majority 57% of students had consumed chicken meal on daily base compared to eggs and red meat were 24% and 19% respectively. While the results showed that, almost participant never consumed fish daily or even sometimes a week. While a very little proportion 1% of students had eaten fish meal sometimes, this may be attributed to economic factor, the fish meal is expensive and not available than other meats, this finding closed to that, that knowing nutritional habits and of the relationship of these habits with economic, socio-demographic factors and health were guiding to the understanding of causes and consequences of nutritional habits (Onder et al., 2004). The proportion of students those who never eat fish, egg, meat or chicken were 96%, 76%, 68% or 41% respectively. Otherwise, the results showed the majority 59% of participants, those consumed vegetables on daily base compared to those who had consumed it sometimes a week, weekly or never intake, they were 21%, 7% and 13% respectively. Obviously, dietary habit and eating behavior of participant's regardless vegetables intake according to dietary recommendations. While, the students who have been consumed fruits daily, sometimes a week, weekly or never intake were 28%, 36%, 15% or 11% respectively. The results showed the little proportion of students had consumed legumes 15% daily compared to those who consumed legumes 53% sometimes within week. Whereas, 19% of students those never eating legumes. It is show, the majority 54% of students had intake milk and dairy products daily rather than those who had consumed milk and dairy products 18% sometimes a week compared to 23% of students never intake milk and dairy products, this may be attributed to dietary habits of their community in addition to economic, environmental and health factors this finding slightly closed to that The most common causes of iron deficiency in children include insufficient intake together with rapid growth and gastrointestinal losses related to excessive intake of cow's milk (Özdemir, 2015). although understood that, participants lied on 17-20 age group, should be considered in transition period to adulthood, this required their plate could rich with main nutrition elements to support transition period. whose consumed milk and egg products that will positively affect their growth less. Diversity food should compensate that unconscious, insufficient and unbalanced nutrition habits with skipped meals (Turconi et al., 2008).

Table (9). Food frequency intake of participants.

	Daily		3-4 times a week		Weekly		Monthly		None	
	F	**P%**	**F**	**P%**	**F**	**P%**	**F**	**P%**	**F**	**P%**
Red Meat	12	19	3	**4**	5	8	1	1	40	ds
Fish	0	0	0	0	1	1	2	3	58	96
Chickens	35	57	0	0	1	1	1	1	24	41
Eggs	15	24	1	1	1	1	1	1	43	73
Vegetables	36	59	13	21	4	7	0	0	8	13
Fruits	17	28	22	36	9	15	6	1	7	11
Legumes	9	15	18	29.5	15	25	7	11	12	20
Milk and dairy products	33	54	6	10	5	8	3	5	14	23

F: Frequency P: Percentage

As show in table (10), the results indicated there is no significant (P>0.05) correlation of hemoglobin level with those who practiced or never animal products intake. The meat, fish, and poultry provide well absorbed sources of heme iron. The borderline of iron-deficient foods are common, (Özdemir, 2015).

Table (10). The relationship of Hb with animal products intake frequently.

	All Sample	**Male**	**Female**
Pearson Correlation	0.087	0.125	0.115
P-value	0.503	0.496	0.551
N	61	32	29

(P<0.05) indicates a significant correlation between two factors

Conclusion

In this study concluded that, strong correlation of hemoglobin with regular breakfast intake, practice coffee and tea drink after meal had been detected. Whereas, no relationship of hemoglobin with BMI, fast meal intake and animal products intake. Obviously, the majority of students don't eat fish, eggs and red meat, that mean, they were not get enough heme iron. Thereafter, potential nutrition problem with iron deficiency anemia among students unless altering their dietary habit. While, bad dietary habits have been observed, they were skipping breakfast and inability to access food during study hours is significantly associated with low hemoglobin level.

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تقييم النمط التغذوي لطلاب كلية التمريض بجامعة مصراتة

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المستخلص

يعكس نمط التغذية الجيدة نظامًا غذائيًا صحيًا ومناسبًا للمساعدة في تعزيز الصحة والوقاية من الأمراض المزمنة للأجيال الحالية والمستقبلية. أجريت الدراسة الحالية لتقييم النمط الغذائي وسلوك الأكل لدى طلاب التمريض بجامعة مصراتة. بالإضافة إلى توضيح العلاقة لكل من مستوى الهيموجلوبين والجنس ومؤشر كتلة الجسم ومدى ارتباطها بالنمط الغذائي وسلوك الأكل. اختير بشكل عشوائي عدد 61 طالباً تتراوح أعمارهم بين 18–30 عامًا. واستخدم ارتباط بيرسون لمعرفة مدى ارتباط الهيموجلوبين بالمعاملات المقاسة. أوضحت النتائج وجود ارتباط معنوي ($P<0.05$) لمستوى الهيموجلوبين مع تناول الفطور بانتظام وممارسة تناول الشاي والقهوة بعد الوجبة مباشرة. لم يظهر أي ارتباط معنوي ($P>0.05$) لمستوى الهيموجلوبين مع الجنس، ومؤشر كتلة الجسم، والوجبات السريعة وتناول الأطعمة ذات المصدر الحيواني. وقد لوحظت بعض العادات الغذائية السلبية بين المشاركين، الذين تخطوا وجبة الإفطار والذين تناولوا وجبات سريعة عدة مرات خلال الاسبوع. كما أظهرت الدراسة أن غالبية الطلاب لم يأكلوا ما يكفي من الحصص الغذائية للأطعمة الغنية بعنصر الحديد مثل السمك والبيض واللحوم الحمراء. بينما العديد من الطلاب لا يحصلون على أطعمة متنوعة بشكل متكرر. وكشفت النتيجة أيضًا أن غالبية المشاركين قد استهلكوا العديد من حصص منتجات الألبان بشكل يومي بديلاً لحصص اللحوم والفواكه والخضروات، وبالتالي يمكن عزوها إلى العادات الغذائية المجتمعية والعوامل الثقافية والاقتصادية. الوعي الغذائي ضروري لاكتساب نمط حياة صحي وعادات غذائية جيدة تتضمن الإفطار المنتظم وممارسة الرياضة البدنية وتدعيم الاغذية والتنويع في النظام الغذائي .

الكلمات المفتاحية: التقييم الغذائي، الهيموجلوبين، مصراتة، أنماط التغذية، الطلاب.

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