

## Influence of Nutritional Knowledge on the Collegians' Quality of Life

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### Abstract

**Background:** Nutrition is vital to the maintenance of health and prevention of disease. The burden of nutrition-related chronic diseases (such as cardiovascular disease, cancer, diabetes, and osteoporosis) and obesity is increasing rapidly world-wide. Many medical schools have been trying to improve their nutrition education curricula. However, there is evidence that medical professionals have serious deficits in their nutrition knowledge. Obesity is an issue for both children and adolescents in addition to adults. Those who are overweight or obese as children or adolescents are more prone to develop obesity and adult problems later in life.

**Objectives:** To assess Nutritional Knowledge among Collegian Students at Diyala city, to evaluate relationship between nutritional knowledge, nutritional habits and quality of life with demographic variables.

**Methodology:** A "descriptive cross-sectional study design" has been carried out where using an evaluation approach from (25th December 2022 to 15th March 2023) at Diyala University to assess Influence of Nutritional Knowledge and Nutritional Habits on the Collegians' Quality of Life.

sample size in this study (400) student was selected from the total College students at Diyala University according to [The minimum sample size was <collected based on "the margin of error of 5% and confidence level of 95%, the population size of 95%, and a response distribution of 50% , the recommended sample size would be (379). ["The number of questionnaires handed to the study subjects was 400 and the natured questionnaires were 400. So, the response rate was 100%.

The reliability result shows that Cronbach's Alpha was ( $r = [0.89]$  for Nutritional Knowledge section and  $r = [0.87]$  for Nutritional Habits section) which is considered an acceptable statistical match with the lowest level Limited by the reliability factor

**Results:** the nutritional knowledge among the three levels for collegian students at most (59.3%) were high with mean 68 and nutritional habits among the two levels for collegian students at most (86.3%) were healthy with mean 27.47, regarding the quality of life among collegian students were healthy with mean 3.09.

**Conclusions:** the results showed there were significant statistical positive correlations between nutritional knowledge with quality of life among collegian students at Diyala city.

**Recommendations:** the study recommended to increase the nutritional understanding and eating habits of among collegian students, continuing education workshops and seminars are required. And Work on publishing a booklet containing nutritional information and a list of diet foods.

**Keywords:** Influence ,Nutritional ,Knowledge , Collegians, Quality , Life

### Introduction

Growing evidence about importance of proper nutrition in ensuring growth and development, and maintaining health and disease prevention emphasized the need for nutrition research in all population groups (Milosavljević et.al, 2015). Overweightness and obesity rates have dramatically increased over the past few decades and they represent a health epidemic in the United States, as well as in many other areas of the world (Sogari et.al, 2018). Many medical schools have

been trying to improve their nutrition education curricula. However, there is evidence that medical professionals have serious deficits in their nutrition knowledge. (Eleni. 2011). There are two parts to good health: good nutrition and good living. In this case, it's a diet that meets one's energy and nutrient needs for proper body functions. It also meets one's caloric needs well enough to keep one healthy. Thus, it takes into account both the quality and quantity of food that a person eats when it comes to their health (National

Nutrition Council, 2017). On the other hand, the consumption of added sugars, processed meats, and trans fats is higher than the recommended daily intake. It has been shown that after the transition from adolescence to young adulthood, when independency increases, young adults are continuously challenged to make healthful food choices (Sogari et.al, 2018). In general, university students have several unhealthy behaviors, such as unhealthy eating habits, decreased physical activity, increased alcohol, reduced sleep, and risky sexual behavior, all of which impacts negatively on their QOL (Lanuza et.al,2022).

## Methodology

A “descriptive cross-sectional study design” has been carried out where using an evaluation approach from (25th December 2022 to 15th March 2023) at Diyala University to assess Influence of Nutritional Knowledge and Nutritional Habits on the Collegians’ Quality of Life. sample size in this study (400) student was selected from the total College students at Diyala University according to [The minimum sample size was <collected based on "the margin of error of 5% and confidence level of 95%, the population size of 95%, and a response distribution of 50%"; the recommended sample size would be (379). ["The number of questionnaires handed to the study

subjects was 400 and the natured questionnaires were 400. So, the response rate was 100%.

The reliability result shows that Cronbach's Alpha was ( $r = [0.89]$  for Nutritional Knowledge section and  $r = [0.87]$  for Nutritional Habits section) which is considered an acceptable statistical match with the lowest level Limited by the reliability factor.

Validity is one of the main concerns of research. Using a panel of 10 experts with a combined total of at least 11 years of expertise in their respective fields. The study instrument's reliability was examined using the Cronbach's alpha approach and “the Statistical Package for Social Science Program (SPSS) version 22.0. It was determined by assessing (25) students in College of Engineering using a test-and-retest procedure”. "The reliability result shows that Cronbach's Alpha was ( $r = [0.89]$  for Nutritional Knowledge section and  $r = [0.87]$  for Nutritional Habits section) which is considered an acceptable statistical match with the lowest level Limited by the reliability factor (Barton & Peat, 2014). This means that the results collected from the pilot study showed that the questions were clear and understandable. In addition to that, the time required for each nurse to be answered was about (20-30) minutes.

## Results

**Table 1**

*Distribution of the Participants According to their socio demographic data Characteristics:*

Demographic Characteristics	Subgroup	f.	%
College type	Basic education	33	8.3
	Education for the humanities	26	6.5
	Administration and economics	27	6.8
	physical education	26	6.4
	Engineering	35	8.8
	Education for pure science	28	7.0
	Medicine	28	7.0
	Veterinary Medicine	31	7.7
	The sciences	30	7.5
	Islamic sciences	25	6.3
	Fine arts	31	7.7
	Law and political science	28	7.0
	Agriculture	28	7.0
	Al-Miqdad College of Education	24	6.0
	Total	400	100.0
Age group	≤ 20 y	70	17.5
	20- Less than 25 y	316	79.0
	25- Less than 30 y	12	3.0
	> 30 y	2	.5
	Total	400	100.0

		Mean $\pm$ SD 21.38 $\pm$ 2.462 Min- Max 17-42 years	
<b>Gender</b>	Male	189	47.3
	Female	211	52.7
	Total	400	100.0
<b>Marital status</b>	Single	354	88.5
	Married	46	11.5
	Total	400	100.0
<b>Educationalstage</b>	First	106	26.5
	Second	94	23.5
	Third	108	27.0
	Fourth	92	23.0
	Total	400	100.0
<b>Residency</b>	City	328	82.0
	Rural	72	18.0
	Total	400	100.0
<b>Body Mass Index</b>	Underweight	20	5.0
	Healthy Weight	268	67.0
	Overweight	96	24.0
	Obese	16	4.0
	Total	400	100.0

f= frequencies, %=Percentages, M = Mean of score, S.D = Standard Deviation, Min= minimum and Max= maximum

In table 1 the results showed the age for 400 collegian students from 14 colleges were at most (79%) from 20-less than 25 years with mean 21.38 years. The sample were collection at nearly equal numbers from 14 colleges and 4 stages. Regarding the gender, the most

(52.7%) of the students were female and the majority were (88.5%) single. According to the residency the majority (82%) from the study samples from the urban area. The results also shown the BMI for students at most (67%) were healthy weight

**Table 2:** Assess nutritional knowledge level among collegian students at Diyala city:

Domains	Items	M	SD	Ass.
Carbohydrates	1. Carbohydrates are the main food source of energy	1.69	.582	<b>H</b>
	2. There are good and bad carbohydrates	1.43	.708	<b>H</b>
	3. There are 4 calories in each gram of carbohydrates	1.03	.752	<b>M</b>
	4. Carbohydrates are made up of long chains of simple carbohydrates. Since complex carbohydrates are larger in volume than simple carbohydrates, they must be broken down into simple carbohydrates so that the body can absorb them	1.22	.771	<b>M</b>
	5. Carbohydrates are not as easily and quickly digested as protein and fat	1.30	.718	<b>M</b>
	6. Most health authorities recommend that about 50 to 55% of the total daily calories should be made up of carbohydrates and less than 10% of the total daily calories should come from sugars	1.20	.750	<b>M</b>
	7. Lactose or milk sugar is one of the main carbohydrates found in milk. In the digestive system, lactose is broken down into its two main parts, glucose and galactose. However, some people may lose the ability to fully digest lactose, a condition known as lactose intolerance or	1.25	.796	<b>M</b>

	inability to digest lactose			
	<b>Overall domain 1</b>	1.30	.366	<b>M</b>
<b>Fat</b>	1. The different fats found in food consist of fatty acids, and there are four basic types of fatty acids, saturated, polyunsaturated, monounsaturated and trans fatty acids	1.46	.663	<b>H</b>
	2. Saturated fats are solid at room temperature and are found in butter, full-fat milk, yogurt, full-fat cheese and high-fat fats, while unsaturated fats tend to be liquid at room temperature and are found in vegetable oils and fish. and nuts	1.37	.730	<b>H</b>
	3. The Dietary Guidelines recommend limiting saturated fats to less than 10% of daily calories.	1.25	.752	<b>M</b>
	4. There are healthy fats and harmful fats. As for healthy fats, they are among the main nutrients that the body needs for its general health, immunity, and brain health, and to reduce harmful cholesterol levels. Total reduction of it may protect many people from heart disease, obesity, and diabetes. And some cancers	1.51	.704	<b>H</b>
	5. Eating a large amount of sugar leads to obesity because it contains very high calories, especially the processed types with more than one sugar content. Obesity leads to relaxation of the body, sleep disturbances and tooth decay.	1.58	.674	<b>H</b>
	6. - An increase in the amount of fat (cholesterol) in the blood increases the ability to be deposited on the inner walls of the blood vessels. Therefore, the possibility of atherosclerosis, high blood pressure, or angina pectoris is possible in the obese person.	1.38	.732	<b>H</b>
	7. Fast foods contain fats and high calories, so it would be dangerous to eat them on a daily basis because of their effects, as the body gains high calories that it will not be able to get rid of easily.	1.61	.628	<b>H</b>
	<b>Overall domain 2</b>	1.45	.411	<b>H</b>
<b>Minerals</b>	1. Minerals, as well as vitamins, are needed by the body first in the formation of tissues, and secondly to help in many of its vital functions. Calcium and phosphorous are included in the formation of bones and teeth. Iron is a component of hemoglobin	1.46	.711	<b>H</b>
	2. Minerals are included in the composition of many enzymes or coenzymes or co-factors. Minerals such as sodium and potassium are important for maintaining the balance of body fluids. This balance between fluids outside and inside cells is very important for cellular function, for nerve signaling, muscle functioning, heart rate regulation, etc.	1.18	.730	<b>M</b>
	3. Milk is considered one of the basic drinks for humans, and it is considered an almost complete meal because it contains nutrients necessary for growth, such as carbohydrates, proteins, fats, elements, inorganic salts, and vitamins.	1.60	.645	<b>H</b>
	4. Calcium is one of the most famous minerals found in milk. In fact, milk is the best dietary source of calcium, which is very important for maintaining healthy bones and teeth.	1.61	.636	<b>H</b>
	5. Adequate intake of calcium is necessary for all ages to prevent osteoporosis	1.55	.666	<b>H</b>
	6. Two 8-ounce glasses of milk per day is enough to meet the recommended amount of calcium.	1.33	.723	<b>M</b>
	7. Cow's milk is an important source of potassium, which in turn reduces vasoconstriction and reduces blood pressure.	1.40	.708	<b>H</b>
	<b>Overall domain 3</b>	1.45	.407	<b>H</b>
<b>Proteins</b>	1. Proteins are central compounds with many functions. They are found in all tissues and form part of every process that occurs in the body	1.39	.723	<b>H</b>
	2. The amount of protein that must be consumed during the day to avoid deficiency is at least 0.8 grams per kilogram of weight.	1.18	.722	<b>M</b>
	3. Consuming vegetable protein sources makes you get a smaller amount of protein in relation to the amount of food consumed in a meal.	1.14	.773	<b>M</b>
	4. Particularly active people and professional or semi-professional athletes need 2 grams per kilogram of body weight.	1.26	.737	<b>M</b>
	5. The amount of protein must be accompanied by appropriate amounts of carbohydrates and fats for better absorption, otherwise the body uses proteins to supplement the deficiency, and	1.29	.728	<b>M</b>

	gets rid of the excess through the kidneys.			
	6. People who suffer from kidney disease or high blood pressure should be careful not to eat protein, and consult with a specialist to balance the amounts of protein in their diet.	1.36	.721	<b>H</b>
	7. It is true that a high-protein diet causes rapid weight loss, but if you do not choose this path as a lifestyle, the evidence indicates that people who follow it and stop suddenly gain weight quickly.	1.32	.752	<b>M</b>
	8. Excess protein is converted into glucose to be converted into energy or may be stored as fat.	1.32	.738	<b>M</b>
	<b>Overall domain 4</b>	1.28	.421	<b>M</b>
<b>Dietary Fiber</b>	1. Soluble fiber. This type of fiber dissolves in water to form a gel-like substance. It may help reduce cholesterol and glucose levels. Soluble fiber is found in oats, peas, beans, apples, citrus fruits, carrots, barley, and psyllium.	1.26	.739	<b>M</b>
	2. Insoluble fiber. This type of fiber promotes the movement of material through the digestive tract and bulks up the stool, so it may be beneficial for those who suffer from constipation or irregular bowel movements. Whole-wheat flour, wheat bran, legumes, and vegetables, such as broccoli, green beans, and potatoes, are good sources of insoluble fiber.	1.14	.760	<b>M</b>
	3. Dietary fiber increases the weight, volume and softness of the stool. bulky stools are easier to pass, which reduces your chances of becoming constipated	1.28	.758	<b>M</b>
	4. Soluble fiber found in beans, oats, flaxseeds, and bran can help lower blood cholesterol levels by lowering low-density lipoprotein or “bad” cholesterol levels.	1.27	.766	<b>M</b>
	5. Thanks to the high dietary fiber that vegetables contain, they are very important in promoting the health of the digestive system and the process of digestion and excretion.	1.37	.751	<b>H</b>
	6. Vegetables are a source of dietary fiber, and many important vitamins and minerals, such as: vitamin A, vitamin C, vitamin E, potassium, magnesium, calcium, iron, folic acid, and other antioxidants and plant compounds important for the body's immunity.	1.39	.758	<b>H</b>
	<b>Overall domain 5</b>	1.28	.457	<b>M</b>
<b>Vitamins</b>	1. The body can make vitamin D when exposed to sunlight	1.56	.688	<b>H</b>
	2. Iron deficiency in the diet can lead to fatigue, injury and disease	1.54	.685	<b>H</b>
	3..It is recommended to use nutritional supplements for all people.	1.41	.744	<b>H</b>
	4. Proteins are made up of units called amino acids, and they come together in complex formations. As a result of proteins being made of complex molecules, it takes longer for the body to break them down. Therefore, they are a much slower and longer energy source than carbohydrates.	1.38	.691	<b>H</b>
	5. The body needs protein to maintain and replace tissues so that they can do their job and grow. Protein is not normally used for energy, but the body does not get enough calories from other nutrients or from stored fat	1.41	.730	<b>H</b>
	6. Vitamins are divided into (A) a water-soluble group such as vitamin C, and a group of B-complex vitamins. These vitamins are not stored in the body and therefore must be taken from food daily	1.28	.758	<b>M</b>
	7. H. Fat-soluble vitamins, including (A), (D), (K) and (E). These vitamins are stored in the body in the adipose tissue, liver and other places	1.40	.738	<b>H</b>
	<b>Overall domain 6</b>	1.42	.425	<b>H</b>
<b>Water</b>	1. Water constitutes about 60% of the human body	1.46	.689	<b>H</b>
	2. Water is necessary to regulate the balance of salts in the body	1.60	.634	<b>H</b>
	3. Water helps improve mental performance and brain functions, including improving memory and concentration	1.57	.660	<b>H</b>
	4. The amount of water that is recommended to be drunk daily is two liters of water, which is equivalent to 8 cups with a volume of 240 cubic milliliters.	1.56	.627	<b>H</b>
	5. It can be inferred from not drinking sufficient amounts of water by light urine, as the dark color of urine indicates dehydration	1.54	.674	<b>H</b>
	6. Lack of drinking water leads to constipation and an increase in stomach acid, which may	1.51	.701	<b>H</b>

cause heartburn and ulcers in its tissues			
7. A severe lack of water in the body may lead to a sharp drop in blood pressure, and thus a decrease in the amount of oxygen reaching all parts of the body.	1.46	.707	H
<b>Overall domain 7</b>	1.53	.434	H
<b>Overall collegian students nutritional knowledge</b>	<b>1.39</b>	<b>.319</b>	<b>H</b>

M = Mean of score, S.D = Standard Deviation, Ass = Assessment level, L = low (0 – 0.66), M = moderate (0.67-1.33) and H= high (1.34-2).

The results in table 2 showed nutritional knowledge level among collegian students were high with mean 1.39 (Min- Max 0-2) and the higher percentage that showed in nutritional knowledge about water with

mean 1.53 and the lower percentage that showed nutritional knowledge about proteins and dietary fiber with mean 1.28.

**Table 3:** Assess level of quality of life among Collegian Students at Diyala city:

Domains	Items	Mean score	SD
Physical health	1. How would you rate your quality of life?	3.06	1.176
	2. How satisfied are you with your health?	2.21	1.137
	3. How much do you feel that pain prevents you from doing what you need to do?	2.63	1.159
	4. How much do you need medical treatment to function in your daily life?	3.05	1.119
	10. Do you have enough energy for everyday life?	3.01	1.077
	15. How well are you able to get around?	2.94	1.078
	16. How satisfied are you with your sleep?	3.11	1.174
	17. How satisfied are you with your ability to perform daily living activities?	3.11	1.118
Psychological health	18. How satisfied are you with your capacity for work?	3.40	1.126
	5. How much do you enjoy life?	2.96	1.053
	6. To what extent do you feel life to be meaningful?	3.05	1.112
	7. How well are you able to concentrate?	3.07	1.062
	11. Are you able to accept your bodily appearance?	3.25	1.120
Social relation	19. How satisfied are you with yourself?	3.57	1.235
	26. How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	3.42	1.167
	20. How satisfied are you with your personal relationships?	3.59	1.095
Environment	21. How satisfied are you with your sex life?	3.40	1.189
	22. How satisfied are you with the support you get from your friends?	3.50	1.092
	8. How safe do you feel in your daily life?	2.73	1.050
	9. How healthy is your physical environment?	2.83	1.089
	12. To what extent do you have enough money to meet your needs?	3.29	1.081
	13. How available to you is the information that you need in your day-to-day life?	3.14	.937
	14. To what extent do you have the opportunity for leisure activities?	2.96	.994
	23. How satisfied are you with the conditions of your living place?	3.43	1.203
24. How satisfied are you with your access to health services?	2.50	1.170	
	25. How satisfied are you with your transport?	3.16	1.105
	<b>Overall</b>	3.09	.445

**1 point represent the worst state of health, while 5 points represent the best state of health**

The results in table 6 showed the quality of life among collegian students were healthy with mean 3.09 (Min- Max 1-5).

## Discussion

### 5.1. Discussion of distribution of the Participants According to their socio demographic data Characteristics as shown in table (4-1).

Research findings showed the age for 400 collegian students from 14 colleges was at most (79%) from 20-25 years with mean 21.38 years.

This study consistent with study conducted by Molan, (2019) that aimed to assess dietary habits and nutritional knowledge of the high health institute female students in Basraha the result showed The majority of the students 82.1% were in the age group < 24 years old.

Also, this study supported by Almansour, Allafi & Al-Haifi (2020) study that discover the age of students ranged from 18 to 37. The current study agree with Barayan et al., (2018) that found the majority of participants was aged from ( 17 to 25 ) years with an average age of (21)

This study agree with Javeed et al., (2021) that aimed to identify patterns of eating habits among university students, result showed most participants were aged (18–26).

Also, the current study supported by Spronk et al., (2014) that aimed to investigate relationship between nutrition knowledge and dietary intake. reported Age < 18 with a mean age <50 years. And our study in the same line with the study done by Hasan, and Abass 2014, in which a high percentage(65.1) of participants were less than 25 years.

But, this study inconsistent with study conducted by Kostanjevec, Jerman, & Koch, (2012) that showed the result indicate most participants was 11-year-old.

The samples were collection at nearly equal numbers from 14 colleges and 4 stages, the high percentage of participants(27%) were in third stage, This study disagrees with a study done by Hussein, and Hasoon 2013, in which a high percentage of participants were in the second stage. Also disagrees with a study done by Mohammed, and Sajit 2016, in which a high percentage of participants(60.9) were in the second stage.

Regarding the gender, the most (52.8%) of the students were female. This result supported by Almansour, Allafi & Al-Haifi (2020) that showed the most of the respondents were female (87.4%), Also this study agrees with a study done by Abass 2012, in which a high percentage of participants(59.1%) were female, and this study agrees with a study done by Hussein, and Hasoon 2013, in which a high percentage of participants were female.

In addition, current study consistent with study conducted by Cheah et al., (2021) that showed the most participants was female with percentage (68.10 ±

14.00). The current study agree with Barayan et al., (2018) that found the most participants was 2516 female,

Also, the current study supported by study Sogari et al., (2018) that aimed to analyze the factors that US college students perceived as influencing healthy eating behaviors, result showed the most participants was female (23 females, 10 male).

This study agree with Ramón-Arbués et al., (2022) aimed to assess the QOL of a group of Spanish university students, result showed most participants were female (78.2%). This study disagrees with a study done by Kudhair 2007, in which males are more than females, and disagrees with another study done by Ahmed, and Hassan, 2022, in which a high percentage(72%) of participants were males. a study done by Mohammed, and Sajit 2016, in which a high percentage of participants (57%) were male which disagree with our study.

Also, the current study supported by Spronk et al., (2014) that aimed to investigate relationship between nutrition knowledge and dietary intake. reported Women represented the majority of participants measured (77 v. 23 %)

This study consistent with Javed et al., (2021) that aimed to evaluate the physical activities and dietary habits and to determine the concept of healthy eating among university students of Pakistan, result showed the most of participants was female with percentage 202 (62.3%)

Also, consistent with study Scalvedi et al., (2021) that showed Most of the respondents were females (80%).

This result supported with study Yahia et al., (2016) that showed the most participants was female student with percentage 78%

But, this study inconsistent with study conducted by Alakaam et al., (2015) that showed was most participants was male (32 ) with percentage( 80%)

According to the residency the majority (82%) from the study samples from the city area. This study agrees with a study done by Salman, and Abbas 2019, in which a high percentage of participants live in the city.

The results also shown the BMI for students at most (67%) were healthy weight this study inconsistent with Almansour, Allafi & Al-Haifi (2020) study that showed the 20.7% of males and 10.6% of females were obese

Also, inconsistent with study Molan, (2019) that aimed to assess dietary habits and nutritional knowledge of the high health institute female students in Basraha The mean body mass index (BMI) was (23.56 kg/m<sup>2</sup>) however twenty-three students were classified as overweight.

Regarding Marital status, the majority were (88.5%) single. This study agrees with a study done by Alabbody et al 2018., in which a high percentage of participants were single (78%). The current study is inconsistent with Alakaam et al., (2015) that aimed to examine the dietary intake changes and factors related to dietary acculturation in international students, revealed The majority of the participants reported weight gain

The current study is inconsistent with Turconi, et al., (2013), that revealed The majority of participants were overweight [mean (SD) body mass index = 28.4 (4.3) kg/m<sup>2</sup>], 12% were malnourished

also, the current study is inconsistent with Spronk et al., (2014) that aimed to examine common dietary patterns and their correlates among a large sample of university student, that reported most participants was obese with body mass index (BMI  $\geq$  30 kg/m<sup>2</sup>)

But, this study supported with Scalvedi et al., (2021) that showed the participants with normal BMI (respectively, 37.4 vs. 45.3,  $p < 0.05$ )

Also, supported by study Sogari et al., (2018) that aimed to analyze the factors that US college students perceived as influencing healthy eating behaviors, result showed the Most participants considered themselves to have a healthy weight with normal body mass index of 23.2 (SD  $\pm$  4.52)

This study agrees with Ramón-Arbués et al., (2022) aimed to assess the QOL of a group of Spanish university students, result showed most participants had a healthy body weight (77.4%)

This study consistent with Javed et al., (2021) that aimed to evaluate the physical activities and dietary habits and to determine the concept of healthy eating among university students of Pakistan, result showed the most of participants 130 (40.1%) have a normal body mass index

Also, the current study consistent with Genena, & Salama, (2017). that aimed to investigate dietary habits for student, The results showed that 28.9% of the students were overweight, 11.8 % were obese, while (55.8%) were of normal weight (49.6% of males compared to 59.1% of females), and 3.5% were underweight.

This result supported by study Yahia et al., (2016), The aim of this study was to explore whether increased nutrition knowledge is associated with a reduction in the consumption of unhealthy fats in a sample of university students. the results showed the majority of students (68 %) were within the healthy weight category.

**5-2: Discussion of Assess nutritional knowledge level among collegian students at Diyala city table (4-2).**

The results in table 2 showed nutritional knowledge level among collegian students were high with mean 1.39 (Min- Max 0-2) and the higher percentage that showed in nutritional knowledge about water with mean 1.53 and the lower percentage that showed nutritional knowledge about proteins and dietary fiber with mean 1.28.

This result supported with study Yahia et al., (2016) that showed female students have greater nutrition knowledge than male students (the mean nutrition score for women was 5 points higher than that of men ( $P = 0.01$ )). Nutrition knowledge was negatively correlated with fat and cholesterol intake. Students who consumed more than 35 % calories from fat or >300 mg of cholesterol daily had lower mean nutrition scores than those students with lower fat or cholesterol intake

Also, consistent with study conducted by Kliemann et al., (2016) that aimed to investigate Reliability and validity of a revised version of the General Nutrition Knowledge Questionnaire, result showed Knowledge (for individual sections and overall score) was higher among women and those with higher education (both having medium to large effect sizes) and lower among those with poor health status.

In addition, current study consistent with study Scalvedi et al., (2021) that aimed to investigate Relationship between nutrition knowledge and dietary intake, result showed the majority of the respondents (66%) were confident that they had a high level of nutrition knowledge.

Current study agrees with Belogianni et al., (2022) aimed to investigate nutrition knowledge (NK) in university students that showed The highest NK scores were found in the healthy food choices (10 out of 13 points) and the lowest in the nutrient sources of foods section (25 out of 36 points). Overall NK score was 64 out of 88 points, with 46.8 % students reaching a good level of knowledge.

This study consistent with Javed et al., (2021) that aimed to evaluate the physical activities and dietary habits and to determine the concept of healthy eating among university students of Pakistan, result showed the most of participants 142 (43.8%) have quite good nutritional knowledge.

**5.3. Discussion Assess level of quality of life among Collegian Students at Diyala city, Table (4- 3)**

The results in table 6 showed the quality of life among collegian students were healthy with mean 3.09 (Min- Max 1-5). The current study agrees with Cheah et al., (2021) that aimed to examine the quality of life (QoL) and health satisfaction of undergraduate university students and showed the overall quality of life and

satisfaction with health were  $3.7 \pm 0.87$  and  $3.9 \pm 0.82$ , respectively.

In addition, current study consistent with study conducted by Al-Naggar et al., (2013), The objectives of this study were to determine quality of life among University students. This study showed that the highest values of the QoL were obtained for Environmental domain and the physical health That's mean most of the participants had a sufficient financial resources, feel secure and freedom and participate in leisure activities

Also, the current study supported with study Joseph et al., (2014) aimed to explore the Physical activity and quality of life among university students that showed The physical activity model (RMSEA = .03, CFI = .99) accounted for 25 % of the variance in quality of life. physical activity had positive direct effects on exercise self-efficacy ( $\beta = .28, P < .001$ ), physical self-esteem ( $\beta = .10, P < .001$ ), positive affect ( $\beta = .10, P < .05$ ). Current study similar to study conducted by Galilea-Zabalza et al., (2018) that show a positive association between adherence to a MedDiet and several dimensions of quality of life.

This study agree with Ramón-Arбуés et al., (2022) aimed to assess the QOL of a group of Spanish university students that show A total of 66.2% of participants assessed their QOL positively, while 58.8% favorably evaluated their overall health. Students reported the highest scores for the physical health domain of QOL.

Also, the current study consistent with a Brazilian study that revealed of college students at a private medical college the QoL of medical students at this institution was better than that of the general population in the country (Snedden et al., 2019)

There is study conducted by Barayan et al., (2018) that found The results of the study indicate that the higher value was obtained for physical functioning and the lower for mental functioning, which is consistent with the results of other studies which adopted SF-36 to study QOL in university students. At King Khalid University in the KSA, female students scored  $73.58 + 16.01$  in physical functioning and  $58.21 + 18.14$  in emotional well-being.

But the study inconsistent with study conducted by Qiu et al, ( 2019). found that, compared with the general populations in Taiwan, Hong Kong, Sichuan, Hangzhou, and Shanghai, the QoL of medical students was relatively poor

Also, the current study inconsistent with Li & Zhong, (2022). That found Compared to the general population; college students have poorer QoL in terms of mental health. Factors associated with poor QoL in college students may include low family income.

### Recommendations:

Based on the results of the current study recommends a continuing increase the nutritional understanding and eating habits of among collegian students, continuing education workshops and seminars are required and Encourage the increase consumption of fruit, vegetables, and fiber and to limit the intake of salt, sugar, and fat to well be known by a large part of the respondents (almost 90%).

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