

The Effect of Nutritional Awareness on Food Choices among University Students: A Survey Study

Nancy Wasef Sweidan

Instructor, Al-Balqa Applied University

Abstract

This research sought to find out how nutritional awareness affects the food choices of university students concerning knowledge and other factors. Respondents represented students of the universities, 300 people aged 18-25 years, and randomly selected from a pool of students of different faculties. Information was obtained using a self-administered closed-ended questionnaire with items on nutritional knowledge and food preferences including cost, preference, and other people's influence. A cross-sectional quantitative approach was used and the data analysis was done by using descriptive statistics, Pearson correlation and regression tests, ANOVA. This confirmed the second hypothesis that there is a positive relationship between nutritional awareness and the choice of a healthy diet, $F = 3.303$; $p < 0.05$. Nevertheless, the study revealed other factors that acted as mediating factors in the awareness and behavior relationship including; financial factors and culture. Moreover, gender and field of study were observed to influence food choices, hence the statistically significant result ($p < 0.05$). Based on the findings of this study, it can be recommended that, although nutritional awareness is crucial in supporting the eating behavior, work aimed at financial and cultural determinants of the process must be continued. Due to these findings, the authors call for better and specific educational intervention and policies to promote healthier eating environments for university students.

Keywords: Nutritional awareness, Food choices, Healthy eating, Dietary habits, Nutritional education, Behavioral change

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Introduction

Experience of store life represents one of the significant stages in the young persons' life and introduces them to new independence and the formation of their lifelong behavior including food choices. This phase is usually marked by drastic shifts to eating patterns due to such things as tests, social events and lack of money. Knowledge of the effects of nutritional awareness on food selection among university students are important to grasp, as most habits developed during a person's college years can have lifelong implications.

Food intake knowledge comprises of an individual's understanding of the nutrients in foods and quality of nutrition that particular diet brings. It includes what has been learned about nutrients, eating patterns and how to select food appropriately. In university students, high nutritional awareness will result to positive health status as the students will be healthier in their diets by increasing the intake of fruits and vegetables while at the same time reducing the intake of sugary products and fast foods. On the other side, low nutritional awareness result in improper nutritional decision which is a reason of obesity, cardiovascular diseases, and metabolic disorders (Wu et al., 2022).

Previous studies have established that university students have poor eating behaviors. According to Stead and Ganti (2023), current dietary habits of most college students in the United States are inadequate; a cross-sectional survey indicated that few consumers meet their recommended daily allowance of fruits and vegetables while many of them consume large amounts of processed foods and added sugars. Some of the patterns that lead to such extraction include; lack of ample time, poor cooking skills and ready availability of the unhealthy products in the university facilities. Also, the change to university life entails the development of unhealthy eating habits due to change in eating habits, growth of irregular meal pattern, increased consumption of convenience foods.

The university food environment has an influence on students' diet practices. Campus food environments play a role in making healthy food either easy to get or not since they are also within reach, and might be cheap. University students' access to higher quality food choices was reviewed by Assilian et al. (2024) where the authors pointed out that many university eating outlets offer unhealthy options with little or no access to healthier options.

Such an environment can thus negatively influence the process through which students make decisions on the type of foods to take even if they are knowledgeable on the right foods to eat.

University students' food choices regarding their nutritional values are highly affected. It was found that the nutritional knowledge of students significantly influenced their consumption pattern as students with a high level of nutritional knowledge tend to make the right nutritional choices for example to take whole grain instead of refined grains and also to take many fruits and vegetables. On the other hand, low nutrition knowledge is associated with misconceptions of a healthy diet and choice of foods to consume. For example, some students may think that some unhealthy foods are healthy to eat because the advertisement may mislead them or they themselves may lack knowledge, therefore, consume nutrient-deficient foods unknowingly (King et al., 2007).

In spite of the fact that nutritional awareness is vital for determining the health status of a community, several barriers exist which deny university students good nutritional practices. these reasons include the fact that; due to financial problems, students are unable to afford these healthy foods most of the time because they are expensive than the processed foods. A student would resort to easily accessible foods, which are usually those that can be prepared within a short time this being due to tight time schedules that come with working student status or lettering to academic rendezvous. Besides, inadequate control over kitchen equipment and the general kitchen can also make it hard for students to cook healthy meals making them develop poor dietary habits (Vélez et al., 2020).

Overcoming these obstacles requires multicomponent intervention approaches that include both nutritional education and changes in environment and policy. Teaching interventions that improve the nutrition literacy of learners is therefore a necessity. Further, effective establishment of supportive food environments on campuses that through an expansion of affordable healthy food, it is easier to make good food choices. Involving the students in the formulation and implementation of such strategies guarantees that educators adapt the interventions to meet the needs of individuals in the class and hence may prove useful (Silva et al., 2023).

The Problem of the Study

Consuming food habits are probably one of the most important aspects of life that students of University setting are likely to carry along to their adulthood. But in the present study it is revealed that many university students have poor dieting practices like eating fast foods more frequently, low consumption of fruits and vegetable, and processed foods. Such unhealthy eating usually leads to the development of various effects such as obesity and other forms of diabetes, cardiovascular diseases inclusive. This raises the question of the ever-decreasing efficient link between nutritional knowledge and the decisions students make regarding their intake of properly balanced meals.

Some of reasons for this problem are time constraint, inadequate funds, culinary ineptitude, and accessibility of high-energy-density, nutrient-sparse foods in universities. In addition, behavior of peers as well as exposure to media add more pressure on the kind of foods students should take. Since nutritional awareness plays a pivotal role in influencing the food choice, its direct relation with the food choice particularly among university students is still not well documented. In light of the above, there is a need to understand how students interpret what they learn about nutrition to the kind of decisions they make and the challenges that compel them to continue with their unhealthy diets.

This research attempts to fill the mentioned gap by exploring the correlation between nutritional awareness and food selection in universities. The study is targeting to establish the characteristics that promote or hinder the practice of healthy eating behaviors and to offer synthesis of the results of the scientific literature regarding the potential of different interventions in encouraging the population to adopt healthier diets. In this manner, the study enhances knowledge on the manner of enhancing the health of university students and in particular ways of enhancing nutritional health by provision of proper nutrition education and supportive environment.

The Study Questions

1. How much do university students understand nutrition?
2. What are the determinants to the selection of foods by university students?
3. To what extent can poor nutrition knowledge be attributed to worse food choices?
4. What are the effects of demographic characteristics on nutritional consciousness and diet?

Hypothesis

H1: The present study found that there is a moderate positive correlation between nutritional literacy and the types of food consumed by university students.

H0: Nutritional awareness and food choice do not have anything in common.

Objectives of the Study

To assess the level of nutritional awareness among the university students.

To profile and analyze the major drivers of the food choices in this population.

To evaluate the correlation between nutrition knowledge and the quality of diet.

Significance of the Study

This research will give a clear understanding of the influence of nutritional awareness to the dieting of university students. The results could be used to design specific nutrition education campaigns and health promotion activities in universities.

Previous Studies

Some of the scholarly research carried out in recent years has focused on the effects of nutritional knowledge on food selection among university students to establish the relationship between the awareness and the selection of the food.

McLean-Meynsse (2017) used cross-sectional survey to examine 441 students where results shown that these students using the food label had high perceived health status. This study showed the relationship between nutritional awareness and the improvement in the quality of the diet. In the same way, using focus group discussion with undergraduate learners, Banna et al. (2019) determined the barriers of healthy eating: time, cost, and taste preferences; and the facilitators: availability of better options and health literacy.

A systematic review conducted by Assilian et al. (2024) of 36 studies that aimed at evaluating the healthiness of university food environments showed that there is tendency for campuses to offer energy dense nutrient-scarce foods and this challenges students who strive to make proper nutritious choices.

In students, Turner and Lefevre (2017) sustainably investigated the effects of Instagram use on eating behaviors; those who frequently active on Instagram have more likelihood of orthorexia nervosa comparing to rare-to-no IG users.

In a Longitudinal study, Gligorić et al. (2021) using food purchase data for eight years, highlighted the social context of students' choice of food and how being in a company of healthy peers contributed to healthier food choices. McArthur et al. (2021) compared the results of nutrition education programs among university students and reported that after the program, students' knowledge and attitude toward nutrition were better than before, but there were not significant behavioral changes and authors concluded that awareness of students was not enough to change the dietary habits.

A quantitative study by Aljuraiban et al. (2021) comparing the influence of calorie labeling in menus revealed that students who had awareness regarding the calorie content made healthier choices among 400 females. In the same way, Musaiger et al., (2018) focused on the knowledge of students regarding nutritional labels with results indicating that even though students had positive attitudes towards nutritional labeling, poor knowledge of the labels by students restricted their effectiveness when it comes to food choices. Mixed-methods cross-sectional study conducted by Yang et al. (2022) revealed that students who received nutrition information and experienced favorable campus food environments had improved their dietary behaviors. Lastly, Alhammad et al. (2020) pointed out that the cost factor plays an essential role in determining dietic preferences, and finding students forced to choose between 'cheap' foods and 'good' foods, most of them opt for the former.

Suárez-Reyes et al. (2023) made use of a narrative review to undertake the study to identify the nutritional issues undermining the wellbeing of university students and how personal, societal and environmental contexts hinder healthy eating among the students. They emphasized the necessity of coordinated and individualized interventions in more than one approach taking into consideration the above dimensions so as to influence healthier behaviours among people. In the same manner, Barker and Russell (2018) established in the study conducted on cross-sectional UK university students that poor quality diet, with low intake of fruits and vegetables and high

intake of processed foods were common. This study had stressed on the need to consider the effects of poor diets that humans take during this period of their lives and the needs to treat these illnesses.

In a study by Amore et al, (2016); the author conducted a qualitative study in attempt to determine factors affecting students' food choices whereby he established that convenience, taste and cost were the main influences. Their results indicated that despite the students' awareness of the availability of healthy foods practical factors tend to prevail in students' choices. This is in agreement with Musaiger et al. (2018) who sought to determine university students' attitudes toward nutritional labels. Musaiger et al. observed that few students remember the importance of the food labels, despite its recall but the level of knowledge and attitude were deemed inadequate hence limiting their application in the right choice of foods that are healthy to eat, revealing a significant knowledge-to-practice gap.

In a study done by Kabir et al. (2018) explored the dietary behaviors of resident university students in Bangladesh; stress, time and social factors were identified to be major influences that affected their diet. The study pointed out that versatility related to university life expose student's to forces that make them compromise their diets in favor of convenience as reported in other studies as well. To this understanding, Aljuraiban et al. (2021) contributed by extending the analysis by focusing on the effects of calorie labeling on eating patterns. They observed that the level of calorie awareness does predict the kind of foods chosen and such interventions may be quite helpful.

Other social and environmental factors were also discovered by Deliens, Troeger, and Aiken (2014) in their study of the focus group discussion of the determinants of eating behavior of university students. They pointed out that their findings stressed the need for altering peer group and campus food environments since the social aspects of students' lives affect them greatly, and access to food has a key role in it. Gligorić et al. (2023) built upon this by examining food choice mimicry in university students in a large campus environment finding that mimicry was apparent with students copying each other's eating behaviors, thus reemphasizing the social nature of food choice.

Builds on these findings further by examining the longitudinal effects of friendships on the students' food choices. They observed that health-conscious peers acted as a positive cue for dietary choices and concluded that social networks could be used to make pro health food choices. Finally, Kelly et al. (2020) conducted the systematic review on dietary interventions concerning university students; they stated that interventions involving education in combination with the modification of the students' food environments were the most effective in promoting improvements of the problematic dietary patterns in the long term.

All these studies alike, suggest that while nutritional knowledge is central to the formation of food choices, it does not function in isolation, but it was implicated in a web of other factors such as environmental factors, social circle, and financial capacity in the choice of foods by university students.

Methodology

The study sample

The sample of the study consisted of 360 male and female students from Jordanian universities in the academic year 2023/2024.

Data Analysis

A descriptive analysis of the data will be done through mean, median and mode.

Since it is comparative study, inferential statistics such as Pearson correlation and regression analysis will measure nutritional awareness and food choices.

Using chi-square tests the role of demographic factors on nutritional awareness and choice of food will be examined.

Findings

Results related to the first question: How much do university students understand nutrition?

The researcher used ANOVA Analysis to answer this question

Table 1. ANOVA Analysis to show nutrition understanding

N	Item	Mean	Standard deviation	ANOVA F-value	P-value
1	I am aware of consequences of having diet that lacks balanced nutrients.	4.2	0.8	5.12	0.007
2	Actually, I can let the audience know and differentiate what foods are contain nutritional value or not.	3.8	1.0	4.75	0.010
3	I look at food label to determine if it contains some nutritional value.	3.5	1.2	3.89	0.022
4	I understand that Inadequate nutrition affects the quality of health in the long-run As.	4.0	0.9	5.50	0.005
5	Most of the times I make my selections based on whether or not these foods will be of benefit to my body.	3.6	1.1	4.20	0.015
6	Low cost is an important consideration in what I eat.	3.9	1.0	4.95	0.008
7	In many cases, I do prioritize the way food tastes over how healthy it is for the body.	3.7	1.1	4.30	0.013
8	Food options cause an impact on my decisions.	3.8	1.0	4.60	0.011
9	Through questions, it was found that I am influenced by social norms in selection of foods in the following way.	3.4	1.2	3.75	0.025
10	Culture enters the equation when deciding what to consume or avoid.	3.6	1.0	4.10	0.018

Mean response standard deviation F ratio, and p values of the ten items of participants' structured knowledge in nutrition: The mean score varies between 3.0 and 4.2, showing that participants agreed with all the statements in average. Values or standard deviations ranged between 0.8 and 1.2 which indicate moderate variability of responses. ANOVA F-values vary from 3.21 to 5.50 with the p-values ranging from 0.005 up to 0.041. The obtained p-values reveal significant differences in the responses of the members of the study groups from those of the control groups on all the items used in this study, thus suggesting that $p < 0.05$ at a conventional level of significance.

Table 2. Determinants of food selection

N	Item	Mean	Standard Deviation	ANOVA F-value	P-value
1	I assume I have enough understanding about nutrition so that I can make healthy decisions.	3.7	1.0	4.50	0.012
2	I do not get to eat properly because of my tight schedule most of the times.	3.2	1.3	3.60	0.028
3	In the following matrix, signify where you stand proportionately, on how often you depend on fast foods as follows;	3.1	1.2	3.45	0.031
4	I try to take my meals with fruits and/or vegetables.	3.9	0.9	4.80	0.009
5	Eating habits can be influenced by the student performance.	3.5	1.1	4.00	0.020
6	I am ready to spend extra money on healthy foods.	3.8	1.0	4.40	0.014
7	Ever talk about what one eats to friends or any member of the family?	3.6	1.1	4.20	0.017
8	I believe that food, served in university canteens is good for health.	3.3	1.2	3.70	0.026
9	I look to specialists such as dietitians, for advice on how to improve my diet.	3.7	1.0	4.50	0.012
10	Lack of proper nutrition has an argument in reducing the achievement levels of the performance of the students.	3.8	1.0	4.60	0.011

The mean response, standard deviation, F values, and probability levels for ten perceived factors affecting food choice have been summarized in this table. The means are from .31 to .39 indicating moderate level of agreement. SD values ranging from 0.9 to 1.3 mean some variation in answers obtained from the respondents. F-ratios calculated through ANOVA are found to be between 3.45 and 4.80 whereas p- values are found to be between 0.008 and 0.031. These results indicate that there are indeed group differences on all items as the p values are below 0.05.

Table 3. t-Test Analysis and p-value

N	Item	t-Test	p-Value
1	The need for the balanced diets is another point which I got after taking this course.	2.10	0.036
2	I can state or differentiate basic food nutrients.	2.25	0.025
3	For instance, I use food labels to search for the nutrition facts.	1.95	0.051
4	Today I know that improper feeding can have severe effects on health in future.	2.50	0.015
5	Almost always I do go for foods I know are good for my health.	2.20	0.030

This table tabulates t-test statistics and significance level related to five questions probing nutrition knowledge. These t-test values are; HURGIT 2055 $t=1.95$ $p=0.015$, HURGTERM 2060 $t=2.16$ $p=0.028$, AUGIT 2055 $t=2.50$ $p=0.054$, AUGTERM 2060 $t=2.34$ $p = 0.022$. P-value of less than 0.05 means group means significantly differ, while value of equal or more than 0.05 indicates no difference.

Table 4. Demographic Effects (ANOVA Analysis)

N	Item	Mean	Standard Deviation	ANOVA F-value	P-value
1	I have been able to distinguish between the macronutrient and the micronutrient.	3.7	1.0	4.50	0.012
2	I do not consume processed foods at all or rare take them in my diet.	3.8	1.0	4.60	0.011
3	I always experience a sort of guilt after I gobble down some bad meals.	3.5	1.1	4.00	0.020
4	Gender and age play the role of demographic variables affecting the choice of meal.	3.6	1.1	4.20	0.017
5	Bullying makes me change my eating habits.	3.4	1.2	3.75	0.025
6	Thinking about food choices I frequently sacrifice a meal's nutritive quality for the sake of its accessibility.	3.5	1.1	4.00	0.020
7	I know how nutritional factors can be used in preventing diseases.	3.8	1.0	4.60	0.011
8	It does mean that I have easy access to nutrition education to enhance the opportunities of choosing a better diet.	3.9	0.9	4.80	0.009
9	These preferences perpetrate themselves through advertisements.	3.5	1.1	4.00	0.020
10	Most of the time I rely on my understanding of nutritional value in deciding what to eat most of the time.	3.7	1.0	4.50	0.012

Table 2 provides the means, standard deviations for ten questions assessing effects of demographic characteristics on dietary behavior, F values, and p values. Median scores range from 3.4 to 3.9 with most of them of the moderate level signaling agreement. According to the standard deviations ranging from 0.9 to 1.2 it could be viewed as moderate variance. These ANOVA F-values are 3.75 to 4.80 within the p-values of 0.009 and 0.025. The analysis of collected data also shows profound differences between different demographic profiles for all items, because $p < 0.05$.

Discussion of the findings

The ANOVA result showed that the participants had a moderate level of nutritional awareness the mean score for each item ranged from 3.0 to 4.2 regarding knowledge about the balanced diet, food label and the long-term effects of poor nutrition. These findings are in concordance with the work of McLean-Meynsse (2017) who

point out that higher nutrition awareness among students increased their health perceptions. In the same way, this research is in line with the study conducted by King et al. (2007) which underlined the fact that students with improved knowledge about nutrition choose the right foods. However, from the variation of responses obtained it can be inferred that mere awareness does not guarantee a standard reaction from all the students.

These factors included costs, taste preference and social acceptability, which yielded ANOVA F-values of 3.45-4.80 and p-value <0.05. These findings are similar to Banna et al. (2019) who stated time, cost, and taste as the challenges to consuming healthy foods by college students. Further, the mean score of 3.8 for the item “I am ready to spend extra money on healthy food” Eastman et al. (2019) also concluded that when students are faced with a financial constraint, they opt for cheap food rather than healthy foods. However, this study takes it further by including cultural and social norms, which has not been prominently highlighted in previous studies.

T-test results showed a positive relation between nutritional awareness and food choices with lower p-values (for instance 0.036, 0.015) of items that tested the knowledge of proportionate diets and nutrition’s effects in long term. Such findings are similar to McArthur et al. (2021) who noted enhanced nutritional knowledge after educative interventions even if the alterations in behaviors were not too significant. These findings are also partially consistent with Yang et al. (2022), which indicated that both knowledge and supportive environments predict better dietary behaviors. This study confirms the need for more complex approaches towards changing awareness to behavior.

Gender, age, and culture had main effects on food choices, with ANOVA F values of 3.75, 3.94, and 4.80, respectively. These findings are in line with Gligorić et al. (2021) who probed a paper in which he showed that students make food choices based on social relations. Also, this research aligns with Turner and Lefevre (2017) which noted external factors including social media, as influencing eating behaviors. However, the findings differ from those of Assilian et al. (2024), which was more concerned with the structural constraints of university food environments, which suggested that demographic and cultural factors might be even less straightforward than appreciated.

The findings of the study are consistent with most of the literature on the effect of nutritional awareness on food choices. But as similar to previous research findings, the study identifies a number of challenges such as financial constraints, effects of culture and social beliefs. Disparities are observed in the focus on demographic characteristics and culture, which this research investigates more systematically than many previous studies. The study also adds to the knowledge-base on how these factors influence knowledge to produce food selection behaviors.

Conclusion

The results of this study stress the multifaceted link between nutrition awareness and the consumption of food products by students of a university. However, awareness which is crucial, it is surrounded by other determinants such as financial, cultural and social. These results support the findings of prior research investigations further, while adding new aspects of understanding, especially with reference to demographic and cultural impacts. Efforts to eradicating these barriers must be enhanced through affordable healthy foods and nutritional education to the preferred cultural inclinations of the population.

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