

A Study of Nutrition Knowledge, Attitudes and Food Habits of College Students

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Abstract: This study designed for understanding the nutrition knowledge, attitude and food habits of college's students. The target population consisted entirely of college student of Payam Nour Universities. Standard questionnaire (K Parmenter and J Wardle 1999) which was developed to measure subject's nutrition knowledge, attitude and food habits distributed among 415 students randomly. After translation, questionnaires were evaluated by professor's faculty of physical education and sport sciences. The reliability analysis yielded Cronbach Alpha values of 0.78 for the knowledge and 0.74 for the attitude scales. The collected data was analyzed by *t*-test, one-way ANOVA and Pearson correlation coefficient ($P < 0.05$). Results show that nutrition knowledge score in physical education student were highest and in business management student were lowest. ANOVA show that there were no significant differences among nutrition knowledge of all majors and between genders. Also nutrition attitude scores for physical education were highest and for psychology were lowest; but difference between nutrition attitudes among all majors was not significant. There were significant positive correlations between nutrition knowledge and attitude; and between nutrition attitude and food habits of male and females students. According to our results, we suggest that student should more attention to nutrition. Also study in college as a golden period for learning, can affect on promote nutrition knowledge, attitude and practices of students, therefore the importance of nutrition in various college curriculums and improvement of the learning environment, related to nutrition need to be emphasized on college campuses.

Key words: Nutrition knowledge • Attitudes • Food habits

INTRODUCTION

The importance of proper nutrition as one of the important aspects of lifestyle were emphasized in the recent years and the trend toward healthier diets has increased [1, 2]. Evidences of Epidemiology indicate that changes in lifestyle in recent years increased incidence of major diseases (such as: cardiovascular disease, cancer, osteoporosis, high blood pressure and obesity), change in nutrition habits can be noted as an important change. Nutrition education as one of the important practical aspects of nutrition knowledge, play an important role in raising public awareness and ultimately health of society [3].

The main goal of nutrition plans is obtaining the appropriate and necessary nutrition to remain healthy, to be physically prepared and to lead a healthy life. For this reason to promote the level of society health, the knowledge and attitudes of its people must be considered.

Given that, one of the main goals of universities is to broaden the knowledge of people of society, so enhancing the nutrition attitudes, knowledge and practices of students have high importance, because this subsequently will lead to more food-conscious society and more healthy people. Also, students are more likely to change positively; therefore, nutritional education to enhance their knowledge can be helpful for the community.

On the other hand, some researches have shown that most students are not familiar with healthy foods needed for their body in different conditions [4, 5] and need to have nutrition education programs [6]. Ruka's research showed that the majority of students (83.6%) eat the three meals of the day regularly and no difference was found between men and women [7]. Although Ruka showed 85.6% of students are familiar with concepts of balance between the nutrients in foods, but only 7% of them use it in their diet, yet 51% of students showed a

tendency towards learning healthy diet [7]. O'Dea showed that 85% of men and 87% of women, who are overweight, decide to go on a diet to lose weight; also 13% of men and 20% of women refuse to eat breakfast. He also reported that the students don't have the necessary information and training about weight control, nutrition needs and diets [8]. On the other hand, Gates *et al.* (1998) showed that students with normal weight have more healthy diet and better points in nutrition knowledge and attitudes compared with the other [9].

While according to Michell *et al.* [10], there is not a significant difference between knowledge and attitude points among overweight and normal weight women. In normal weight women, body mass index and body fat percentage were related with nutrition attitude [10].

Ahvaz University Research results showed that students need to learn proper nutrition and there is an obvious decline in their sports nutrition quality and in this area the students of nutrition science and physical education can educate them. [11]. Kargarfard and colleagues also reported that subjects only answer to 50.9 % of the questions correctly [12]. Cupisti and colleagues [13] by comparing the nutrition habits and nutrition knowledge of female students in both physical education and non-physical education, found that consumption of carbohydrate in physical education students was more than non-physical education students and consumption of fat in non-physical education students was more. Physical education students consumed large amounts of fiber, iron and vitamin, but consumption of iron and calcium in both groups was less than required daily amounts [13].

Unfortunately in our country Iran, there are not adequate researches about students' nutrition and sufficient information is not available. So, the objective of current research is to achieve better understanding of nutrition knowledge, attitude, nutrition diets, body composition of students and provide solutions that enhance and improve awareness and knowledge of students to choose healthy and appropriate foods in order to promote of health among male and female students. Therefore the purpose of this study was to evaluate nutrition knowledge, attitude and food habits of college students.

Method and Subjects: The target population of this research consists of all Payame Noor students (male & female) of Golestan province. First, the number of centers and units of Payame Noor University, branches of Golestan and the number of enrolled students at the separation of their study courses that located in Gorgan

in Golestan province were collected. Then, according to Odinsky table, the acceptable number of samples was determined and 415 questionnaires were distributed, filled out by students and collected.

After the translation of the standard questionnaire (K Parmenter and J Wardle 1999) [14-17], some questions were modified according to food and nutrition culture, consulting some experts to obtain validity and the alpha Cronbach method was used to obtain reliability. The reliability analysis yielded Cronbach Alpha values of 0.78 for the knowledge test and 0.74 for the attitude scale. An institutional ethics review board at University of Guilan-Iran approved this study.

For pilot research, questionnaire was distributed to 31 students and necessary modifications were done. The Questionnaire consisted of five parts and first part is about some personal information about students and their body composition. The second part contains questions that measures students' awareness about the division of food groups and their ingredients. The third part include some questions about student's attitudes toward nutrition and related diseases. The fourth part poses some questions about choosing the foods and the last part collects student's recommendations.

Statistical Analysis: Means, standard deviation and percents were calculated for the scores from the nutrition knowledge, attitude and food habits sections. Pearson's correlation coefficient were used to assess the correlation between nutrition knowledge, attitude and food habits of college athletes; and analysis of variations (ANOVA) to evaluate the nutrition knowledge and attitude between majors and independent t-test for comparing the nutrition knowledge and attitude between males and females. Statistical results were considered to be significant at $p \leq 0.05$.

Findings: Mean and standard deviation of height, weight and Body Mass Index (BMI) of subjects are in Tables 1&2. The results showed that knowledge level of Physical Education is highest and Business Administration is the lowest (Figure 1). One-way ANOVA show that, there is not a significant difference in the knowledge level between students of different majors ($p < 0.35$; $F = 1.118$). Also knowledge level of male subjects was higher than that of female subjects. Attitude level of physical education with the grade 61 out of 100 is the highest and psychology with the grade 54.68 out of 100 is the lowest (Figure 2). One-way ANOVA Also showed that there is not a significant difference in nutritional attitude level between other majors ($F = 0.958$; $p < 0.444$).

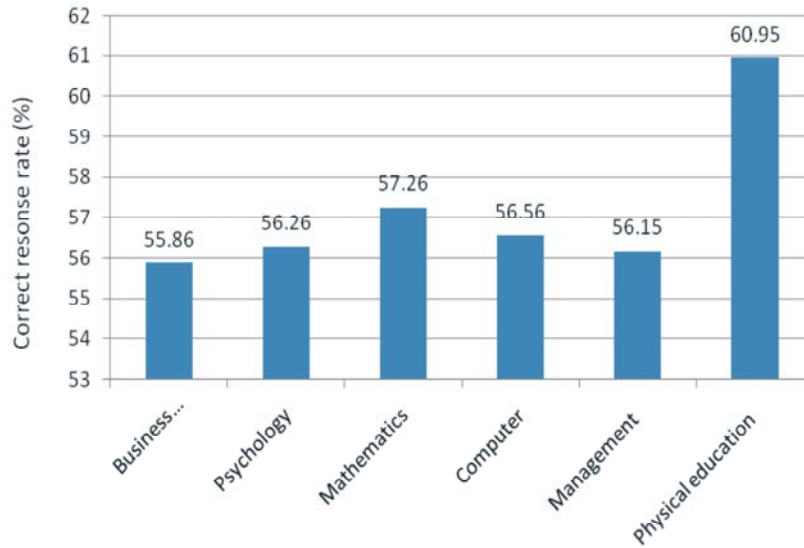


Fig. 1: Nutrition knowledge percentage of college students

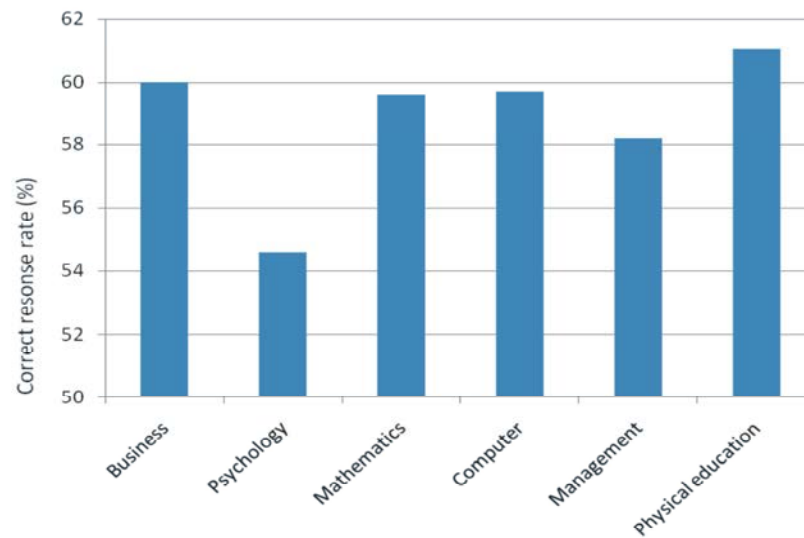


Fig. 2: Nutrition attitudes percentage of college students.

Table 1: Anthropometric characteristics of subject

Gender	height	weight	BMI index
Male	176.04±7.15	70.19±10.2	22.61±2.9
Female	162.05±6.22	57.35± 8.68	21.9±2.1

Table 2: Body mass index of Students

	Males		Females	
	Number	Percentage	Number	Percentage
Lean (less than 20)	21	15.6	63	22.5
Normal weight (20-25)	84	62.2	170	60.7
Overweight (25-30)	19	14.1	25	8.9
Obese (More than 30)	3	2.2	5	1.8
Total	127	94.1	263	93.9
No reply	8	5.9	17	6.1
Total	135	0	280	100

Results concerning diet also showed that 41.8% of subjects eat fish once or twice a month and only 12.2% of subjects eat fish 6-9 times a month. In addition, 75.6% of subjects eat breakfast every day and only 3% of subjects reported that they do not eat breakfast at all. Also 62.1% of the subjects eat fruit every day; while the 6.8% eat fruit only once or twice a week. Only 2% of the subjects said yes to the question of “Do you have any nutrition license?”

Moreover, results showed that there was a positive and significant correlation between knowledge level and attitude level of both genders. Also there was a positive and significant correlation between diet and attitude of both female and male students. In response to last

question (answer back), "Factors of low nutritional information", 62.7 % of the subjects have noted the lack of information as the main causes for low nutritional awareness. (Table 3). Table 4 also shows how to increase nutrition knowledge as the perspective of students.

DISCUSSION

According to World Health Organization (WHO) definition from obesity, BMI above 30 is considered border of the obesity [18]. This definition is based on a research on Caucasian race. But the Asians in comparison with Caucasians have more fat and less BMI [19]. The results of this research showed that Golestan province Payam e Noor University student’s BMI mean is in normal condition and obesity spread is low (2.2%) but spread of overweight is high (14.1%). Amamoto and his colleagues’ (2004) showed that the overweight among Japanese students was 5.8% and obesity was 0% [20]. Also in Samakaki and his colleagues research on Chinese students, overweight spread was 2.5% and obesity spread was 0.4% [21]. But in USA spread of obesity or overweight (BMI = 25) was 35% [22]. However, overweight spread in this research is higher than that of Japanese and Chinese students but not higher than of American students.

Some pervious researches have shown that students are slightly aware of nutrition issues and their knowledge and attitude are average [21]. In this research, the average knowledge of male students was 57.28% and that of female students was 56.71% which this shows that the students have average nutrition knowledge and this replicates pervious research [23]. It’s been observed in this research that the nutrition knowledge of physical education students is the highest among majors. (60.95% of total scores). This is consistent with pervious researches which showed that nutrition knowledge is related with the field of study [24, 25]. With regard to the fact that nutrition, physiology and exercise science are the subjects of physical education courses, it can be said that reason of increase in the nutrition knowledge of these students in comparison to other students is the passing of such courses. Georgia and colleagues (1993) stated that the nutritional knowledge and attitude are not correlated with gender [25]. In the present research also the results show that there is not significant difference between knowledge and attitude of male and females. And this is in contrast with previous results that reported the female students achieved better scores than male students on nutritional knowledge and attitude [24, 26, 27]. They expressed, females note to their nutrition and health issues rather than males and it can be the reason for females’ greater knowledge and attitudes than males. But our results do not confirm this point.

On the other hand, Sakamaky’s researches showed that most students eat three meals regularly [21] while in research conducted in Japan only a few students eat three meals regularly [28]. In the current research 69.6% of males and 73.6% of females eat breakfast every day. This is consistent with Youching and his colleagues’ researches which reported that 81% of subjects agree or completely agree with the necessity of eating breakfast [27]. The previous researches have shown that nutrition knowledge is positively and significantly correlated with attitude [21, 29]. In this current research there is a positive and significant correlation between attitude and knowledge of male students ($p= 0/000$, $r= 0.484$) and female students ($p= 0.000$, $r= 0.401$). This has also been reported in previous research [26, 30, 29, 31]. In this research, there is a positive and significant correlation between knowledge and attitude of students towards nutrition. Also there is a positive and significant correlation between attitude and the proper food habits. This finding is consistent with Wong and his colleagues. [27]. Kankl and his colleagues (1999) and Bidan and his colleagues (2008) showed that the education leads to

Table 3: Main cause of low nutritional awareness

	Factors	Frequency	Percent
1	Lack of information	143	62.7
2	Carelessness to nutrition	27	11.8
3	Not interest	3	1.3
4	Lack of time	17	7.5
5	culture	9	2.6
6	Family	3	1.3
7	Financial	2	0.9
8	Lack of nutrition course	17	7.5
9	Education	6	2.7
10	Fast food	1	0.4
11	Lack of nutrition congress	3	1.3
	Total	229	100

Table 4: Survey results concerning the strategies to increase the nutrition knowledge of students

Priority	Strategy
First Priority	Distribution of brochures containing nutrition information
Second Priority	Through Media such as TV
Third Priority	Trough students periodicals
Forth Priority	Making the nutrition courses compulsory
Fifth Priority	Nutrition training through holding workshops and seminars
Sixth Priority	Through media such as newspapers
Seventh Priority	Students in universities Establishment of nutrition councils
Eighth Priority	Designing a nutrition website on university scale

increase in the average scores of knowledge and attitude [11, 32] and there is a significant difference between knowledge and attitude scores in pretest and posttest. Sharma and colleagues (2008) also reported that the nutritional knowledge is significantly related with dietary habits (including consumption of meat, dairy, grains and water) [33]. The findings of these studies show that educational interference lead to increase in nutrition knowledge and enhancement of people's attitudes. Maybe in this research, higher attitude and knowledge of physical education students also verify this. Appropriate diet has a considerable effect on society's health improvement. Therefore, results of this research suggest that students should pay more attention to nutrition issues, because the student era as a golden era, better than other periods can increase nutritional and attitude knowledge of students, so, nutritional education should be gained more attention in this era.

CONCLUSION

With regard to the fact that high nutrition knowledge and attitude of physical education students are related to their nutrition courses, according to poll results from the subjects in this research, 62.7% of subjects have been reported; lack of adequate information as one of the main factors in low nutrition knowledge and only 2% of subjects have nutrition license; therefore holding nutrition workshop and courses in university and even including nutrition and courses in the curriculum can enhance their attitudes and nutrition behaviors and have a positive effect on them.

Also owing to limited nutrition studies in Iran and the importance of promotion of nutrition knowledge and attitude for keeping the society healthy, further studies on this area seem necessary.

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