

Knowledge and Attitude of Students in Shahroud University of Medical Sciences on Health and Food Safety

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ABSTRACT

Background and objectives: Knowledge about health and food safety is important for disease prevention and protection of the environment from pollution. The present study investigated university students' knowledge and attitude on health and food safety.

Methods: The study was performed on 148 students from Shahroud University of Medical Sciences in 2017. The subjects were selected through simple random sampling. A valid and reliable questionnaire on knowledge and attitude towards health and food safety was used for collection of data. The data were analyzed by SPSS-16 software using descriptive statistics, t-test, one-way analysis of variance (ANOVA) and chi-square test. In all tests, the level of significance was set at 0.05.

Results: Most students had moderate knowledge and good attitude about health and food safety. There was a significant relationship between level of education and attitude towards health and food safety ($P=0.046$).

Conclusion: Knowledge on health and food safety is crucial for preventing contamination of foodstuff and reducing the risk of foodborne illness. The students in the Shahroud University of Medical Sciences have relatively good knowledge and attitude towards health and food safety.

KEYWORDS: food safety, knowledge, health, attitude, student

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INTRODUCTION

Although food is crucial for survival of every living organism, an unhealthy diet can lead to various problems such as poisoning, illness, allergies and malnutrition in humans (1). Food safety is defined as conditions and measures taken during the production, processing, storage, supply and distribution of foodstuff to ensure the safety of food and its suitability for consumption (2). Knowledge about health and food safety is important for disease prevention and protection of the environment from pollution. Millions of people around the world suffer from foodborne illnesses (3). Typical symptoms of these diseases include diarrhea, fever, headache, vomiting, abdominal cramps, fatigue and sometimes blood or pus in the stool (4). According to the Centers for Disease Control and Prevention, foodborne illnesses are responsible for 76 million cases of gastrointestinal disease and 325,000 serious illnesses that require hospitalization (5). Although the incidence rate of foodborne illnesses is very high, it accounts for 10% of the actual cases in developed countries (6). Factors that typically are involved in foodborne illness outbreaks include improper storage of food (temperature and duration), contaminated tools, food from unsafe sources, poor personal hygiene and inadequate cooking (7). In addition, consumer behavior such as consumption of raw or undercooked foods and poor sanitary conditions play an important role in emergence of food-borne illnesses (8, 9). In less developed countries, majority of food poisonings are due to lack of awareness and storage of food under unsanitary conditions (10, 11). Studies have shown that improving knowledge of individuals could be effective for promotion of nutritional status of a community (12). A study by Nan et al. indicated that students who have passed courses on food safety have higher level of knowledge compared to other

students (13). Considering the importance of this issue, this study aimed to investigate knowledge and attitude of university students on health and food safety.

MATERIAL AND METHODS

This study was carried out on students at the Sahroud University of Medical Sciences in 2017. The subjects were selected through simple random sampling. Data were collected using a researcher-made questionnaire (4). The questionnaire consisted of three parts: demographic variables, knowledge (11 questions), and attitude (10 questions) on health and food safety. A score of 1 was given to each correct answer to knowledge questions and a score of 0 was given for incorrect answers or no comments. The answers to attitude questions were scored using a 4-point Likert scale (completely agree, agree, disagree and strongly disagree). Reliability of the questionnaire was measured and Pearson correlation coefficient values of 0.8 and 0.7 were obtained for knowledge and attitude questionnaires, respectively. Cronbach's alpha coefficient of 0.8 was calculated for the reliability of the whole questionnaire.

The purpose of this study was explained and the subjects were assured about confidentiality of their personal information. Finally, the data were analyzed with SPSS-16 software using descriptive statistics, t-test, one-way analysis of variance (ANOVA) and chi-square test. In all tests, the level of significance was set at 0.05.

RESULTS

Overall, 148 completed questionnaires were collected. The mean age of subjects was 20.95 ± 3 years. Most students were female (60.1%), single (85.1%), undergraduate students (89.9%) and living in dormitories (84.5%) (Tables 1).

Table 1. Demographic characteristics of the students in the Shahroud University of Medical Sciences

Characteristic		Number (Percent)
Sex	Male	59 (39.9)
	Female	89 (60.1)
Marital status	Single	126 (85.1)
	Marriage	22 (14.9)
Residence	Dormitory	125 (84.5)
	Other	23 (15.5)
Education level	Associated Degree	4 (2.7)
	Bachelor	133 (89.9)
	Doctorate	11 (7.4)

A majority of students had moderate knowledge and good attitude about health and food safety. There was a significant relationship between level of education and

attitude towards health and food safety (P=0.04) (Table 2).

Table 2. Relationship of demographic variables with knowledge and attitude of students towards health and food safety

		Number (Percent)	Age	Sex	Marital status	Residence	Education level
Knowledge	Poor	16 (10.8)	P=0.916	P=0.108	P=0.282	P=0.554	P=0.076
	Moderate	90 (60.8)					
	Good	42 (28.4)					
Attitude	Poor	0	P=0.206	P=0.228	P=0.869	P=0.292	P=0.046
	Moderate	25 (16.8)					
	Good	118 (79.8)					
	Very good	5 (3.4)					

We found that 45.9% of the students had poor knowledge about meat spoilage. Moreover, 20.3% of the subjects had little knowledge about storing milk in the fridge, and 13.4% had poor attitude towards signs of spoiled

canned food. Furthermore, 50% of students had a negative attitude towards placing raw food next to cooked food, and 6.2% believed that raw milk does not cause food poisoning. Most students (92.5%) also believed that it is

necessary to wash hands with soap before

DISCUSSION

The present study evaluated knowledge and attitude of students on health and food safety. In this study, 60.8% of the students had moderate knowledge and 79.8% had good attitude about health and food safety. Foodborne diseases can be a major threat to health of vulnerable groups, including young people. In this study, 28.4% of the students had good knowledge about foodborne diseases. In a study in the University of Missouri (USA), students had acceptable knowledge about foodborne illnesses (13). In our study, the level of education was correlated with attitude towards health and food safety. This is consistent with the results of Sharafifard et al. (14). In the present study, 6.2% of the students believed that raw milk does not cause food poisoning. In a study in Canada, more than 50% of the subjects had poor knowledge about eating raw foods that could cause food poisoning (15). Undercooked or contaminated foods may carry harmful microorganisms that spread to healthy food and cause foodborne illnesses (16).

In this study, 92.5% of the students believed that it is necessary to wash hands with soap before cooking. Improper hand washing can spread microorganism and increase the risk of foodborne illnesses (17). A study conducted by Sockett showed that a large proportion of people do not know the basic principles of food safety (18).

CONCLUSION

Knowledge on health and food safety is crucial for preventing contamination of foodstuff and reducing the risk of foodborne illness. The students in the Shahroud University of Medical Sciences have relatively good knowledge and attitude towards health and food safety. Health education can significantly improve the knowledge and attitude of society towards health and food safety.

cooking.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR'S CONTRIBUTIONS

All authors contributed to design of the study, data acquisition, analysis and interpretation of data. MA drafted the manuscript. All authors read and approved the final manuscript.

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