SHORT COMMUNICATION

Food safety knowledge, attitudes, and practices (KAP) among nursing students: A cross-sectional survey

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ABSTRACT

Introduction: Food borne illness is a global public health concern. Food preparation classes are not often part of basic educational curricula. As a developing global problem, food safety significantly affects public health worldwide.

Objective: the objective of the study was to assess the knowledge, attitudes, and practices related to food safety among nursing students.

Materials and methods: A Cross-Sectional Survey was applied to 105 undergraduate nursing students. Population selected for this survey was students from nursing college in AIIMS New Delhi. Convenient sampling technique was adopted to enroll the subjects. A semi structured tool was developed and validated to assess the knowledge, attitude and practice towards food and safety. Tool consists of 4 sections pertaining to demographic characteristics, knowledge, and attitude and practice assessment.

Result: Students had good knowledge regarding food safety with mean knowledge score 13.35 and SD ± 3.09. They were having good practice with mean score 7.32 and SD ± 2.49. There was significant correlation between knowledge and practice (p=0.00, r=0.455). Attitude score was 26.40 (SD ± 13.36) with minimum 15 and maximum 75. Attitude showed negative relation(r=-0.372) to knowledge and practice. Between the group knowledge was significant (p=0.025).

Conclusion: It should be emphasized that all colleges should include food safety in their curriculums to enhance their knowledge to change their eating habits healthy. The students should be motivated to improve their attitude towards food and food safety through various means to bring about the changes in the behavior.

Keywords: Food safety; Knowledge; Attitude; Practice; Under-graduate students

INTRODUCTION

Food borne illness is a global public health concern. Food preparation classes are not often part of basic educational curricula. As a developing global problem, food safety significantly affects public health worldwide. Young adults could be a new emerging "at-risk" population. College students are traditionally within this age range and may have limited knowledge of food safety or safe food handling practices when they arrive to campus. Food safety and other environmental health issues are typically overlooked in university health promotion classes. Byrd-Bredbenner and others (2008) stated that "the importance of young adult food handling behaviors becomes clear as their current and/or future roles as caregivers for household members at increased risk, such as young children and aging parents, is realized." College students may be forced to procure, purchase, and prepare their own meals for the 1st time, but safety may not be a priority for these students [1-5].

If people know how to cook, they will have healthier eating habits. Preparing meals in the home is often marketed as a way to save money. College students often live on very limited funds, and therefore may begin to prepare meals for themselves. Health professionals, such as registered dieticians, encourage consumers to limit the use of convenience foods, as these foods are typically high in calories and sodium. In order to make this practice sustainable, it is important that these students are able to prepare foods safely. Researchers at Rutgers University conducted an in-home assessment of the homes in which students lived and found that these kitchens are supportive of food-borne pathogen growth and transport. For that reason, it is reasonable to hypothesize that the majority of college students have not formed habits to insure food and contact surface cleanliness and proper food preparation skills. Therefore, college students appear to be a population that may need to be informed and educated on proper food preparation techniques and practices [6,7].

According to the World Health Organization, an estimated 600 million-almost 1 in 10 people in the world-fall ill after eating contaminated food and 420,000 die every year, resulting in the loss of 33 million healthy life years. A study in China attributed 99,487 illnesses and 380 deaths to acute food borne illnesses among the 2387 individual incidents reported over the last decade. Current consumer research indicates that individuals between 18 and 29 years of age are more likely to engage in risky eating behaviors than are older adults, as are individuals with education beyond high school. In China, one study indicated that though college students are concerned or very concerned about food safety issues (95.1%), the food safety knowledge score was only about 60%, and 77.1% of the students purchase unsafe food, which proven to potentially harm their health. Meanwhile, the proportion of junior college students eating out was high, but they had poor knowledge and unhealthy behaviors towards eating out [8-10].

McCarthy and others (2007) reported that among the Irish population "at risk" for food borne illness, young men (ages 18 to 24 years) were most at risk. It was also likely that they would not engage in safe food preparation in their own kitchen. This risk could be even further complicated by the fact that many college students co-occupy a living space and prepare their meals in a shared kitchen. Danish men and women age 18 to 29 were found to be more likely to consume a risky meal than were older adults. Recent studies have found that young adults, ages 18 to 29 years, and individuals with education beyond high school are more likely to engage in risky eating behaviours, such as consumption of raw or undercooked meats, raw sprouts and raw, homemade cookie dough [11, 12].

Students from the school of nursing, education and medicine were chosen because it is not only important for them but also they are expected to play an important role in health education and promotion after their graduation as health and education professionals, nursing, medical and education students should have appropriate knowledge about food safety. Understanding their food safety knowledge and analyzing the influence

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factors are not only helpful in reducing food-borne illness but also helpful to launching the corresponding health education and to spread knowledge of food safety, thereby to influence a broader population. This study aims to examine food safety-related knowledge, attitude and practice among nursing students [13].

College students are not typically considered a high-risk group for food borne illnesses. Several gastrointestinal risk factors for this population, including excessive consumption of alcoholic beverages, stress and anxiety, use of antibiotics, and consumption of hydrophilic food additives such as polyols. When students move off campus, they may begin preparing their own food for the 1st time. A meta-analysis identified young adults as the group with the poorest safe food handling practices and knowledge. The food-handling behaviour of young adults are important also because in the future they will become the caregivers for household members at increased risk, such as young children and aging parents.

MATERIAL AND METHODS

Research design and participants: A cross sectional descriptive survey was administered to 105 participants using online Google forms as COVID-19 condition was there and physical data collection was not possible. The survey contained a description of the objectives of the study and the purpose of data collection, the rights of the participants and the confidentiality of the use of the data. Participants were not offered any incentive. They were informed that they can express their desire to participate or not to participate in the study. Study sample were selected using convenient sampling method [14].

Data collection instruments: A structured questionnaire was formulated for the subject after developing the objectives. The structured questionnaire was submitted to nursing expert for their valued opinion to establish content validity. It was formulated in online format. Due to the outbreak of COVID-19 physical data collection was restricted, so the questionnaire was formulated in online format in Google forms.

After getting informed consent data were gathered from the residents of MEDHA hostel AIIMS, NEW DELHI. Questionnaire consists of 4 sections. Section I consists of 9 questions to collect information related to demographic profile like name, age, sex, education, parents education, annual income and present class year of study. Section II comprises 20 question (MCQ type questions) related to testing knowledge of the participants. Section III comprises 15 questions (LIKERT question) to assess the attitude of participants toward the food safety. Section IV comprises 15 questions to assess food safety practice. Reliability of the questionnaire was tested among nursing students in one of the college of nursing, in New Delhi city with Cronbach's alpha for each set of the questions range within the acceptable limit (>0.7).

Statistical analysis: Statistical analysis was performed using SPSS statistical package version 26. Descriptive analysis of socio-demographic data, knowledge, and attitude and practice data was done using tables of frequency and percentage. Pearson's correlation, and annova were used for correlation and comparing the means [15].

RESULTS

Table 1 describe the socio-demographic data of the students. Among the students, 33.3% were 1st years, 27.62% were 2nd years, 20% were 3rd year and 19.05% were 4th years (of a 4 years B.Sc. Nursing Degree). Majority of the fathers and mothers of the students were government employee (39.05%) and homemakers (79.05%) respectively. Only 8.57% families have annual income of more than 5 lakh and 22.86% have less than 50,000 per annum. All the participants were female [16].

In Table 2: Observed that students were having good knowledge regarding food safety with mean knowledge score 13.35 and SD ± 3.09. They were having good practice with mean score 7.32 and SD ± 2.49. Mean attitude score of the students was 26.40 (SD ± 13.36) with minimum 15 and maximum 75.

In Table 3: It is observed that Knowledge and practice showed significant (p 0.00) positive relation (r=0.45) whereas attitude showed negative relation(r=-0.372).

Table 4: Shows comparison of knowledge means between the group (4 years of B.Sc. Nursing.) which is significant (p=0.026), at 95% confidence interval.

Table 1: Frequency and percentage distribution of demographic characteristic of the subject.

Variables		Frequency	Percentage (%)
Year	1st Year	35	33.33
	2nd Year	29	27.62
	3rd Year	21	20
	4th Year	20	19.05
Mother`s education	Illiterate	11	10.48
	Up to secondary	27	25.71
	Senior secondary	26	24.76
	Graduate	31	29.52
	Post graduate	10	9.52
Father`s education	Illiterate	1	0.95
	Up to secondary	15	14.29
	Senior secondary	24	22.86
	Graduate	49	46.67
	Post graduate	16	15.24
Mother`s occupation	Government service	16	15.24
	Private service	3	2.86
	Self employed	3	2.86
	Home maker	83	79.05
Father`s occupation	Government service	41	39.05
	Private service	29	27.62
	Self employed	31	29.52
	Home maker	4	3.81
Annual family income	<50,000	24	22.86
	50,000-1,00,000	35	33.33
	100,001-5,00,000	37	35.24
	>5,00,000	9	8.57

Table 2: Frequency and percentage distribution of total knowledge, attitude and practice scores (N=105).

Variable	Mean score	SD	Range	score		Median
				Min.	Max.	
Knowledge	13.35	3.09	17	3	20	13
Attitude	26.4	13.36	60	15	75	22
Practice	7.32	2.49	12	0	12	8

Table 3: correlation among knowledge practice attitude N=105.

	Knowledge	Practice	Attitude
	Score	Score	Score
Knowledge Score	-	r=0.455 p=0.000	r=-0.372 p=0.000
Practice Score	r=0.455 p=-0.000	-	r=-0.433** p=0.000
Attitude Score	r=-0.372 p=0.000	r=-0.433 p=0.000	-

Table 4: comparison of means of all four years of under graduate nursing.

Year of graduation	N	Mean knowledge score	95% (C.I.) for mean	F-value	p-value
First year	35	13.9143	13.07-14.75	3.205	0.026
Second year	29	11.9655	10.49-13.43		
Third year	21	13.3810	12.46-14.29		
Fourth year	20	14.3500	12.79-15.90		
Total	105	13.3524	12.75-13.95		

DISCUSSION

In this online survey we have assessed Knowledge, Attitudes, and Practices (KAP) among nursing students regarding Food and food safety. It was found that students had good knowledge regarding food and food safety with mean knowledge score 13.35 and SD ± 3.09 (maximum knowledge score 20). They were having good food safety practice with mean score 7.32 and SD ± 2.49. But mean (regarding) food safety attitude score of the students was only 26.40 (SD ± 13.36) with minimum 15 and maximum 75. It reflects that students were not interested and motivated regarding food and food safety. Knowledge and practice showed significant positive relation (p 0.00, r=0.45) which shows that improvement in the practice regarding food safety with enhancement in the knowledge.

Majority of the students (77.14%) students had good knowledge and related to food safety. This is consistent with the finding of the other studies in which they found that students in the Shahroud University of Medical Science have a relatively good knowledge and attitude towards health and food safety. Similar another study found that students in Sloveni have good knowledge and practice towards food safety. These studies show that the students of nursing and medical were having good knowledge regarding food safety.

College students are living away from home in the hostels or as tenant. They eat outside or prepare food themselves therefore So they should have good knowledge related to food safety to keep themselves healthy and fit else they may fall ill and have to bear loss of health and study as well [17].

This study found that majority of the students (97.14%) had good practice related to food safety. This would reflect in their behavior. Similarly in a study conducted food safety, knowledge, attitude and practice among College students from nursing education and medical sciences in Chongqing, China. The study concluded that the nursing education and medical students were concerned about food safety issues. At the same time, they had in adequate knowledge and in appropriate behavior towards food safety. The healthy food behavior prevents many food borne diseases [18].

On the other hand in the present study attitude of the students was low towards food safety with attitude score of 26.40 (SD ± 13.36) (minimum 15 and maximum 75). This shows good knowledge and practice only cannot change the attitude of the students. The students should be motivated to improve their attitude towards food and food safety. Similarly a study on food safety knowledge attitude and practice of college students, Ethiopia revealed that the overall knowledge, practices, and attitude towards food safety among college students were very low. Therefore, the findings of this study proposed that strength should be done to improve the existing food safety knowledge, practice, and attitude in college students in addition to their normal education. An another study on food safety knowledge and attitude among food handlers in Sohag Governorate, Egypt concluded that average knowledge attitude practice towards food safety among college students were very low. A similar study conducted on food safety knowledge and practice among college female students in North of Jordan found low knowledge level. It was concluded that improving student's knowledge about food safety was an issue that should be taken in consideration [19].

The studies show that, It should be emphasized that all college curriculums should include food safety to create awareness among the students through knowledge enhancement. Good knowledge will change the eating habits healthy. Knowledge of food safety will help avoiding food borne diseases that cost a lot to the society [20-22].

LIMITATIONS

When evaluating the implication of this study, there are certain limitations that must be considered. In the first place this study is limited to only one college, so the findings cannot generalize to all nursing and academic colleges of New Delhi. Sample size was small in the study therefore similar study should be conducted on large sample size. It is a cross sectional survey so longitudinal study may be planned.

CONCLUSION

In conclusion, the current study reported knowledge, attitude and practice among under graduate Nursing students regarding food safety in the city New Delhi. It concluded that good knowledge about food safety amongst college students leads to good practice. But building of positive attitude requires sensitization through various measures to motivate. This awareness towards foods safety help them eating nutritious and safe food. This will reduce the food borne disease and malnutrition. Findings of this study provide insight to plan the curriculum of all graduation programmes where food safety can be incorporated.

CONFLICT OF INTEREST

Authors clear that there is no conflict of interest involved in the study.

REFERENCE

1. Fischer ARH, Frewer LJ. Food-safety practices in the domestic kitchen: demographic, personality, and experimental determinants. J Appl Psych. 2008; 38(11): 2859– 84.
2. Lam HM, Remais J, Fung M C, et al. SunFood supply and food safety issues in China. Lancet. 381 2013: 2044-2053.
3. Christensen BB, Rosenquist H, Sommer HM, et al. A model of hygiene practices and consumption patterns in the consumer phase. Risk Anal. 2005;25(1): 49–60.
4. Byrdbredbenner, Byrdbredbenner JM, Abbot V, et al. Blalock Risky eating behaviors of young adults-implications for food safety education. J Am Diet Assoc. 2008;108 (3): 549-552.
5. Brown BJ, Hermann JR Cooking classes increase fruit and vegetable intake and food safety behaviors in youth and adults. J Nutr Educ Behav. 2005; 37(2): 104– 105.
6. Byrd-Bredbenner, Byrd C, Bredbenner J, et al. BlalockFood safety self-reported behaviors and cognitions of young adults: Results of a national study. J Food Prot. 2007;70 (8):1917-1926.

7. World Health Organization. Food safety Key facts
8. Xue, Zhang J. Xue W, et al. ZhangUnderstanding China's food safety problem: An analysis of 2387 incidents of acute foodborne illness Food Control. 2013; 30 (1):311-317.
9. Patil SR, Cates S, Morales R, et al. Consumer food safety knowledge, practices and demographic differences: Findings from a meta-analysis. J Food Prot. 2005; 68 (9): 1884– 94.
10. Sun J, Sun Y, Bo J, et al. Evaluation of a food safety education on knowledge, attitude and practice among 1300 college students of Henan province, China. Food Nutr Res. 2014; 2 (4):136-140.
11. Ping H. Ping W, Huang R, et al. Knowledge, attitude, and behaviors related to eating out among university students in China. Int J Environ Res Public Health. 2014; 13 (7):696.
12. McCarthy M, Brennan M, Kelly AL, et al. Who is at risk and what do they know? Segmenting a population on their food safety knowledge. Food Qual and Pref. 2007;18: 205–17.
13. Byrd-Bredbenner C, Abbot JM, Wheatley V, et al. Risky eating behaviors of young adults – implications for food safety education. J Am Diet Assoc. 2008; 108(3): 549– 52.
14. ChengY, Zhang Y, Ma J, et al. Food safety knowledge, attitude and self-reported practice of secondary school students in beijing, China: A cross-sectional study. PLoS One. 2017; 12 (11): e0187208.
15. Morrone M, Rathburn A. Health education and food safety behavior in the university setting. J Environ Health. 2003; 65(7): 9– 15.
16. Patil SR, Cates S, Morales R, et al. Consumer food safety knowledge, practices and demographic differences: Findings from a meta-analysis. J Food Prot. 2005; 68(9): 1884– 94.
17. Abolhassani M, Eftekhari N, Basirinezhad MH, et al. Knowledge and Attitude of Students in Shahroud University of Medical Sciences on Health and Food Safety. jcbr. 2018; 2 (3):50-54.
18. Ovca, Andrej, Jevšnik, et al. Food safety awareness, knowledge and practices among students in Slovenia. Food Control. 2014;42: 144–151.
19. Lam, Hon-Ming, Remais, et al. Food Supply and Food Safety Issues in China. Lancet. 2013: 381. 2044-53.
20. Jember Azanaw, Henok Dagne, Zewudu Andualem, et al. "Food Safety Knowledge, Attitude, and Practice of College Students, Ethiopia, 2019: A Cross-Sectional Study", BioMed Res Int. 2021;10 .
21. Hamed A, Mohammed N. Food safety knowledge, attitudes and self-reported practices among food handlers in Sohag governorate, Egypt. Eastern Mediterranean Health J. 2020; 26(4):374-81.
22. Tareq M. Osaili, Bayan A,et al. Food safety knowledge and practices among college female students in north of Jordan,Food Control. 2011;22 (2) 269-276.