



Perception and Practices Regarding Food Safety and Health Profiles of College Students

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ARTICLE INFO

ABSTRACT

Keywords:

Food Safety
Youth
Perception
Food Practices
Health Profile

College students are among the educated parts of urban society and might be considered more resistant to food-borne illness due to higher immune function. The objective of this research was to assess the perceptions and practices of food hygiene among college students and determine their health profile. The method was using a structured questionnaire by cross-sectional survey on 222 college students in Central Java. The descriptive analysis used to describe their perception and food hygiene practices. The study found that more than 90% of participants tended to follow recommended food safety practices. More than 80% of college students reported consumption of potentially hazardous foods, while 36% and 26% reported experience of fever and diarrhea, respectively. These findings suggest that specific subsets of the student population are more likely to follow recommended food safety practices and are at lower risk of developing foodborne illnesses. This study will perform the next level analysis, which includes the profile of the gut microbiota.

1. INTRODUCTION

Since history first recorded, the social health problem was unsafe food and water, and society faced food safety problems. However, foodborne illnesses are frequently, not apprehend as a significant health problem by people and even considered a common consequence (George et al., 2018). People perception of food safety is reportedly associated with demography. Higher education level and adult age show a positive relationship with perceptions and practices of safe food hygiene (Nesbitt et al., 2014).

Proper food preparation can prevent most foodborne illnesses. It becomes more critical as food, and harmful water-borne diseases are a significant health burden leading to high mortality and morbidity worldwide. The global burden of diarrhoea involves almost 1.8 million deaths annually, and 3-5 billion cases caused by contaminated food and water they used. Foodborne disease outbreaks observed number of cases of a particular disease outdoes the expected number. This disease defined as the occurrence of 2 or more acute cases resulting from food ingestion (Haileselassie et al., 2013). Young adults, especially males, engage in unsafe food handling practices. This habit nestling them at increased risk for foodborne disease (Byrd-Bredbenner et al., 2007) also has poor perception and safe food practices (Green & Knechtges, 2015). However, food contaminated chances depend mainly on food handler health status, hygiene, awareness and practices of food safety (George et al., 2018). Previous research has shown that adult food safety knowledge tends to increase with age and practice: female correspondents have better knowledge than men, and younger respondents need additional food safety education more than adults (Rimal et al., 2001).

People's knowledge about safety procedures is essential in forestalling foodborne diseases (Arendt et al., 2013; Yasemin et al., 2013). Recent studies also discover that knowledge, practice, and attitude are critical factors in avoiding the occasion of poisoning by food (Thomai et al., 2012). Knowledge means divers scores by subject area where students related to science were most knowledgeable, followed by art students and engineering students (Low et al., 2016). This result is similar to other studies that students in the field of scientific study have more food hygiene insight (Thomai et al., 2012).

The perception and practices of food safety in various groups extensively researched (Nesbitt et al., 2014; Anderson et al., 2011; George et al., 2018; Green & Knechtges, 2015; Rossi et al., 2017; de Andrade et al., 2019). However, to the best of our knowledge, no other authors have discussed food safety perceptions and practices among college students and their health profiles. As a basis for perceptions, practices and behavior of young consumers, it is very important to develop an effective health education program in Indonesia. The purpose of this study was to assess the perceptions and practices of safe food hygiene among students. This research can be valuable information in further studies of food hygiene practices and health profiles.

2. RESEARCH METHOD AND MATERIALS

2.1 Research Tools and Materials

The questionnaire form, designed to examine college student perceptions of hygiene and food safety practices, is divided into four sections. In the first part, we determine the socio-demographic profile of the college students. In the second part, the questions are focused on determining their perceptions about food safety. The third section assesses college students' practices related to food hygiene, and the final section assesses their health profile. Subjects were selected by simple random sampling, consisting of 222 college students in Central Java from various departments and generations.

2.2 Research Methods

Data were analyzed in Microsoft Excel and SPSS software version 24. Knowledge and practice scores were categorized to assess perceptions and practices of safe food hygiene among college students and also determined their health profile.

3. RESULTS AND DISCUSSION

3.1. Socio-demographic profile of college student

Socio-demographic result showed that the college student was at the same level of ages, (Table 1), 80% was female. Nearly half (46%) of the college students were 21 and above, more than 27% of the college students were 20 years old, only 14.8% were 18 years old.

Table 1. Sociodemographic profile of college student

Socio-demographic variables		Frequency	Percentage (%)
Gender	Male	45	20%
	Female	177	80%
	Total	222	100%
Age	18	33	14.86%
	19	27	12%
	20	59	26.58%
	21 and above	103	46%

3.2. Perception of Food Hygiene

Frequency and percentage levels of the college student's perception of food hygiene are presented in Table 2. Almost all college students show serious concern for food hygiene. Only 18.92% of college students gave correct answers to avoid food poisoning; perishable foods should be stored in containers. Table 2 also shows that more than 93% of college students agree that ignoring food hygiene rules during food production leads to foodborne illness. This finding is consistent with research conducted in cooking schools by Giritlioglu et al., 2011. In their research, students in cooking schools have the same knowledge as those in this study. In our study, only 32.88% were aware that salmonella is the bacteria that causes food poisoning. More than 92% of the college students gave correct answers to the question that improper heating causes foodborne diseases.

Besides, only 36.04% of college students knew that they had to serve food more than two hours after preparation. Unfortunately, this also means that more than a quarter of them (33%) are unaware of this danger. This finding was approved by Giritlioglu et al., 2011, in their study, almost a quarter of college students also did not know the dangers. This study offers insight into the determinants that influence self-reported perceptions of food safety among college students from diverse backgrounds. In general, the overall perception percentage average score, 70%, indicates a good level of perception about moderate food hygiene. Low et al., 2016; confirmed more than 63% of students expressed good knowledge about food hygiene. However, compared to Sun et al., 2015, among students in Henan Province, China, the results show a low level of food safety knowledge.

Table 2. College students' perception of food hygiene

	College student gives answers					
	Agree		Disagree		Do not know	
	Freq.	%	Freq.	%	Freq.	%
Should keep all types of food in container	207	93,24	2	0,9	13	6
Dirty water causes diarrhea	193	86,94	5	2,25	24	10,81
Should keep the food safe when distributed	212	95,50	0	0,00	10	4,50
Should keep perishable food on the container	42	18,92	129	58,11	51	22,97
Preparation of food disregarding food hygiene rules causes foodborne illness	186	83,78	2	0,90	34	15,32
<i>Salmonella</i> is a kind of microbial which causes food poisoning	73	32,88	72	32,43	77	34,68
Improper heating of food causes foodborne illnesses	205	92,34	3	1,35	14	6,31
Food should be served no later than two hours after the preparation	80	36,04	74	33,33	68	30,63
Conserving raw food and cooked food together causes foodborne illnesses	206	92,79	4	1,80	12	5,41

3.3. Practices in Personal Hygiene

Food hygiene practices are fundamental to ensure safe food consumption - the results of the questions on food hygiene practices are presented in Table 3. It can be seen that 73.42% reported that they always wash their hands before eating. This result is lower than the study by Giritlioglu et al., 2011, where almost all college students (98.8%) always wash their hands. Also, less than half (43.24%) of college students always buy food properly. Means that more than 50% of college students ignore the dangers of food-borne. We found that more than 90% of college students have the potential to follow recommended food safety practices. However, more than 82% of college students reported eating potentially dangerous foods; this finding was agreed upon by George et al. (2018) and Iwu et al., (2017). Furthermore, this study shows that perceptions of food hygiene do not directly improve eating habits, especially the prohibition of consuming harmful foods.

Table 3. College Students in Personal Hygiene

	Always		Often		Sometimes		Rarely		Never	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
How often do you wash your hands before eating?	163	73,42	45	20,27	14	6,31	0	0	0	0
How often do you buy your food in the proper place?	96	43,24	100	45,05	26	11,71	0	0	0	0
How often do you eat street foods?	22	9,91	81	36,49	92	41,44	27	12,16	0	0
How often do you eat the ice blocks?	12	5,41	53	23,87	91	40,99	49	22,07	17	7,66
How often do you eat the food that has been dropped for a while?	22	9,91	73	32,88	145	65,32	106	47,75	53	23,87

3.4. The Types of Reported Illnesses of College Student

As can be seen in Table 4. 36% of college students suffered from fever and diarrhoea (26%). Nearly half (46%) of the college students were suffering from stomachache 46%.

Table 4. Types of reported illnesses of college student

Types of Illnesses (the past month)	Freq	%
Diarrhea	52	26
Fever	72	36
Stomachache	91	46
Headache	30	15

Common illnesses differ in that our study was conducted in the summer when viral fever is more common than respiratory illness. Diarrhoea and headaches are among the symptoms of foodborne disease, which means that some college students may suffer from

foodborne illnesses. However, a study by Low et al., 2016 showed that college students had the slightest knowledge of foodborne illness symptoms. Nearly a third of the college students suffer from food poisoning. These findings suggest that most of the poisoning occurrences could come from cooking in restaurants, indicating that food safety practices have not been rigorously followed. This finding is confirmed by Al-Shabib et al., (2017), the results studied showed that nearly half of the respondents had experienced food poisoning and 2/3 were aware of the health hazards associated with food poisoning. Food hygiene practices affect the health profile of college students. The direct effect of college students perceptions of foodservice risk, being a positive effect for “other people” and an adverse effect for “self” perception, indicates an optimistic bias. In this case, college student behaviour can be shaped by a sense of familiarity with a place or heuristic feelings of affection and social identity (Tiozzo et al., 2017). However, this study shows that perceptions of food hygiene do not directly increase the prohibition of consumption of potentially hazardous foods, but can improve food hygiene attitudes, which in turn can improve personal hygiene control and eating habits. This finding was confirmed by (Hee Kim, 2019), where they conducted a study known that food hygiene attitudes can improve personal hygiene control. Several studies have shown that food safety knowledge and self-reported behaviour do not relate well to food handlers and consumers (Al-Shabib et al., 2016). This finding means that college students are less aware of foodborne diseases. The study is essentially the need for an educational program that aims to impart knowledge and encourage college students to practice strict food hygiene measures.

4. CONCLUSION

This study aimed to determine the college student's perceptions and practices of safe food hygiene and the health profile. This study found that the lack of appropriate food safety guidelines and a lack of safe food hygiene perceptions contribute significantly to inadequate perceptions and poor practices of proper food safety and safe food hygiene. These findings suggest that specific subsets of the student population are more likely to follow recommended food safety practices and have a lower risk of developing foodborne illnesses. Food safety education for the public should target both men and women and those with more education and older age. This study will perform the next level analysis, which includes the profile of the gut microbiota.

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