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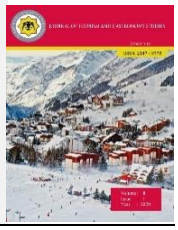

A Research on Food Safety Knowledge and Practices of Tourism Employees**

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Abstract

The aim of the study is to reduce potential risk of food safety practices at the level of tourism employees and to raise awareness for appropriate food safety practices. In this research, the knowledge about food safety of individuals employed in food and beverage units for tourism purposes, and observed food safety practices specific to Karabük, Bartın, Kastamonu and Sinop provinces of Turkey are given. Quantitative and qualitative methods were used together in this process. In the results of the study, the average food safety knowledge for employees was calculated as 4.05.

Article Type

Research Article

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INTRODUCTION

Food and beverages play an important role in the travel experience of a tourist. Especially, gastronomy, which can be seen as an effort to transform food and beverage activity into science and art, and gastronomy tourism in destinations where local dishes are served, continues to become an important attraction (Aydoğdu and Duman, 2017, p.282). In this process, efforts to improve the quality of service in enterprises that offer food and beverage services have gained speed in order to gain superiority to their competitors. In particular, in the context of professionalism in the presentation of food services in these enterprises, supporting the development of employees in order to better understand the customer needs has become prominent. Because it is believed that employees in a food and beverage service unit did not reach the desired level during the food services process for the following reasons (Cohen et al., 2001, p.8):

- Food and beverage services employees usually consist of inexperienced young people,
- Even trained managers are often unaware of inappropriate personal hygiene, improper sanitation practices and hazards,
- Many customers are not concerned about food safety, and those who are concerned, lack of knowledge in assessing whether or not the standards are met,
- Inconsistencies between real knowledge about food safety, hygiene and sanitation practices.

Every tourist who wants food during their travel process wants to make sure that the food is prepared safely. In this sense, the employees involved in the process of providing food service to tourists should have the right knowledge and skills in food safety and food hygiene before they start working (www.melbourne.vic.gov.au). In order to talk about good food hygiene in a food and beverage service unit, the basic behaviour expected by the employees is to comply with the relevant food law, reduce the risk of food poisoning, control harmful bacteria and maintain the reputation of the enterprise (https://www.food.gov.uk). The growing concern for foodborne diseases has damaged the image of destinations that are thought to be visited and has affected the decision to travel to destinations. Frequent reports of food poisoning in destinations lead to increased perceived travel risk and reduced attractiveness of destinations (Sönmez and Graefe, 1998, p.175).

In the context of tourism, consumption of delicious food and beverages is a common concern for tourists travelling. However, for guests, cleaning is an inseparable part of the purchased products. Although a food and beverage enterprise can prepare delicious food and beverages, it cannot be a preferred destination for tourists if there is a compromise to cleanliness. In the process of providing food and beverage services to satisfy tourists, enterprises should buy and deliver food products under healthy conditions, store, prepare and present them to the market. In particular, these tasks must be undertaken by the employee who have acquired the habit of using clean equipment and sanitary work habits. Because the main task of a food and beverage enterprise owner is to ensure that the food served to guests is safe and healthy.

The main objective of this research is to determine the food safety practices of employees working in hotels, restaurants, bars, cafes, etc. and to raise awareness of foodborne diseases at the employees level. In line with this objective, the findings and assessments regarding the behaviour of individuals working as employees in the food and beverage service units for tourism purposes in the provinces of Bartın, Karabük, Kastamonu and Sinop are included.

Literature Review

The food sector, which started with the production of agricultural and farm products, is a complex, concentrated and dynamic chain of activities that are carried to retail food stores with processed products. This chain is unique in size, scope and diversity with organizations offering food service, such as restaurants, and is always an up-to-date and popular interest in shaping the demographic and lifestyle changes of consumers with the demands of science and technology (Marriott and Gravani, 2006, p.45).

Quality, hygiene and safety of food served to guests in tourism is one of the critical factors for enterprises. Uncomfortable experiences from food services have a significant impact on the perception of the destination of the enterprise and the enterprise itself (WTO, 1992). For consumers who buy food outside their home, food safety in these enterprises is an important element in reducing their various concerns and enterprise preferences (Kennedy et. al., 2008, p.700; Sneed and Strohbehn, 2008, p.1172). Consumers relate cleaning of food enterprises, hygienic practices of employees, food smell and appearance to food safety. Some consumers, on the other hand, would like to see a document that enterprises are adequate for food safety (Sienny and Serli, 2010, p.645; Uggioni, and Salay, 2012, p.472). In this context, local authorities at a tourism attraction centre must have sufficient knowledge and practice in preparing and presenting safe food to owners, managers and employees of tourism enterprises. However, the main responsibility of a qualified food enterprise manager is to operate its establishment within the framework of legal requirements within the food legislation in its country.

Food employees are individuals who work on surfaces where food can come in contact with unpackaged food, equipment and supplies. These individuals may be people involved in food processing and preparation in a food processing plant, or they may be cleaning, handling, presentation staff and managers, even if they are not involved in food preparation. Food safety "is to take all necessary measures to protect human health against damage caused by food consumption". It covers all measures taken to ensure that when a food is prepared or eaten, it will not harm the consumer. It envisions protection from biological, chemical and physical hazards that may occur during all stages of the food chain (growing, harvesting, processing, transportation, sales, distribution, preparation, storage and consumption) (WHO, 2006; Stranks, 2007; www.fao.org). The main requirement in ensuring food safety is to ensure hygiene and sanitation at all stages from the purchase of food and beverages to the consumption (Bilici et al., 2008). In this sense, trained, well-informed, motivated and skilled employees, who are trained to follow appropriate procedures, play an important part of food safety (Cohen et al., 2001, p.8).

Food safety is an issue that concerns the whole society in the context of food production enterprises, food supplying enterprises, consumers who consume food and public health and it is thought that there are important responsibilities for employees in the presentation of foods that can be consumed for physiological or psychological reasons and most foodborne diseases caused by dangerous microorganisms or toxic chemicals are thought to be prevented by the appropriate food processing process (WHO, 2006). Two or more people who consume the same contaminated food or beverage and have the same disease are considered as food epidemic and diseases caused by the consumption of food contaminated directly or indirectly with harmful microorganisms (bacteria, protozoa) are considered as "foodborne diseases". These diseases are foreseen to occur in different situations, depending on the type, number of microorganisms contained in a food during consumption, the type of poison caused by germs, and the sensitivity of the person consuming the food (Baird-Parker, 1995, p.32 ; Jafari, 2000; Ghiselli, 2014).

Food poisoning and infections are inevitable for food and beverages prepared by people who do not have the correct knowledge and skills about food preparation. In food poisoning, which occurs when bacteria enter food within 1 to 72 hours after the ingestion of a food contaminated by toxic waste produced by bacteria, the poisoning is caused by the poison that germs produce, not the germs themselves. In food infections, on the other hand, it is not the poison produced by the germs that cause the disease; it is the germs themselves (Ninemeier, 2000; Stranks, 2007). Food safety is the assurance that the food consumed by the customer will not be harmed. For this reason, a food enterprise manager who wants to create an effective food safety in his restaurant should always work with reputable suppliers who provide clean and quality products/services, deliver suppliers on time, ensure traceability of food products, and support employees with training on personal hygiene and the right food safety. Because the majority of food-borne diseases are of biological origin and are caused by microorganisms that are caused by the wrong application of food at any stage throughout the food service chain (Yousuf et al., 2015, p. 5).

"A number of practices and procedures related to safe food consumption" are called as food hygiene. In food hygiene, it is stated that the main objective is to control the hazards and to provide necessary precautions and conditions for ensuring the suitability of a food for human consumption (Stranks, 2007). As a result of the mass nutrition that is becoming increasingly widespread in the changing world, the preparation of large quantities of food is required to comply with the practical and procedures called food hygiene, food production and consumption in all processes, and food hygiene is emphasized. Unless importance is given to food, it is inevitable that many deaths and diseases will occur as a result of infections and poisonings caused by food (Tayfur, 2009). The main purpose of food hygiene is to produce or sell foods that are safe. However, the importance of good food hygiene to comply with the laws on food safety, reduce the risk of customers experiencing food poisoning, and protect the reputation of the enterprise is emphasized (Food Standard Agency, 2013).

In the production of safe food, which is an important issue for billions of people living in many parts of the world, it is thought that human health can be protected by five golden rules, including the use of high quality raw materials and water, keeping clean, separating raw and cooked food, cooking and storing food at appropriate temperatures. In particular, it is expected to comply with the golden rules during the harvesting, processing, storage, distribution, transportation and production process of food raw materials (http://who.int). Because of the growing concerns about foodborne diseases, the destination image has been damaged and the tourists ' decision to travel has been affected (Yeung, 2009, p. 22). In this process, accommodation operators have started to include ISO 22000: 2005 Food Safety Management System within the scope of food safety among their international standards (Aydoğdu, 2017, p. 28) and HACCP practices have become more and more embraced. However, on the scale of Turkey, tourism employees' practices regarding food safety are continuing and the tourism sector needs to be guided on food safety (Şanlıer and Cömert, 2008, p. 49; Şanlıer et al., 2008, p. 50)

Methodology

This study is a descriptive research aimed at determining the opinions, interests, skills, abilities and attitudes of tourism employees towards food safety and is based on a screening model. For this purpose, by using a convenience sampling method the data collected from 392 employers in enterprises that offer food and beverage services in the tourism sector between July and December 2017 in Karabük, Bartın, Kastamonu ve Sinop, Turkey. The most significant reason for the selection of these regions as a research area is the fact that these regions is the most

important touristic destinations for both domestic and international visitors as it hosts of the Western Black Sea Region. In the study, questionnaire and unstructured observation techniques were used in the context of the emergence of the employees' theoretical and skills competencies in food safety (researcher's following behaviour and events from outside). The main reason for the choice of these two techniques is the inconsistencies between the answers given to the questionnaire questions in the food safety measurements and the practices in the preparation of observational food.

In the context of the presentation of food safety knowledge and behaviour of tourism employees, a two-stage process was followed in order to collect data. Quantitative and qualitative methods were used together in this process. Firstly, the questionnaire was used as a quantitative data collection tool for measuring food safety knowledge levels of tourism employees. Statements on the questionnaire scale were developed from studies conducted by Sani and Siow (2014) and Lee et al. (2017). It is very important that the expressions in the adaptation of the foreign language scale are appropriate to the language and culture to be adapted. In this context, after the necessary permissions were obtained from the scale owners, the scales were adapted to Turkish by two academicians who mastered the English language. After this adaptation, a different academician conducted the translation into English. After the linguistic validity was obtained after the studies done, the validity of the of the questionnaire was supported by the focus group study conducted with 2 tourism academics, 2 food engineers and 1 nutrition and dietetics specialists. In the survey, the classification scale for demographic knowledge of the participants, and the five-point likert scale was preferred in the determination of food safety data. Expressions for the identification of food safety knowledge were assessed with 35 expressions containing “I fully disagree”, “I disagree”, "I partially agree", “I Agree” and “I fully agree” options. Questions on measuring employees ' knowledge of food safety in the questionnaire include personal hygiene and cleanliness, cross contamination prevention, food cooking and food preservation.

Secondly, in the study, the observation form prepared by the unstructured observation technique, which is one of the methods used in qualitative data collection, was used as a data collection tool in determining the behaviour of tourism employees towards food safety. In unstructured observation technique, it is essential that the subject of the research and the individuals and objects related to the problem be observed within a certain time frame and that these observations are usually monitored in the environment where the individual's behaviour takes place. An unstructured observation is a technique referred to in detail to describe the behaviour of any environment or institution and can be called “participatory observation” (Aziz, 2008; Yıldırım and Şimşek, 2008). Observation technique is a more neutral data collection tool in collecting data because it allows researchers to monitor behaviour directly in the natural environment in which it occurs. Because in social science research, it is very common for individuals who are measured in terms of interviewing and questionnaire methods to answer questions that are addressed to them in the way they want to appear, not as they are (Karasar, 2000).

Within the scope of the research, the data collected from 392 employers were recorded in the computer environment and subjected to reliability measurement. Subsequently, in the analysis of the research data, the skewness and kurtosis coefficients were taken into consideration on the decision to use parametric or non-parametric tests. The skewness coefficient was found to be -0.560 and the kurtosis coefficient was found to be 0.075. Since the test results are within the range of (- +) 1, it is decided that the data show normal distribution and that parametric tests are used. In this context, data were analysed with percentage, frequency, t-Test and ANOVA tests. In the study,

data for practices in the scope of observation technique food safety were recorded on the computer under the dimensions of personal hygiene, clean keeping, cross contamination, accurate cooking and preservation-storage. And the practices of the employees were attributed to the error time (morning, noon, evening), the employee proficiency status (sufficient, partially sufficient, insufficient) and the number of customers (less, medium, many) and assessed in the percentage and frequency analysis.

Findings and Discussion

In this study, which was carried out in the context of the presentation of food safety knowledge and practices of tourism employees, the knowledge shown in Table 1 for demographic (gender, age, educational status, monthly income, professional experience) and other characteristics (type of enterprise, task, food safety knowledge) of the employees who have played a role in preparing or presenting food in tourism enterprises in Karabük, Kastamonu, Bartın and Sinop provinces were obtained. In descriptive knowledge, male employees (61.5%), 19-32 age range (67.1%), secondary education graduates (34.2%), income range of TL1000-2000 (63.8%), 1 to 5 years professional experience (57.9%), restaurant employees (45.2%), food and beverage preparation and presentation staff (44.4%) and food training participants (40.3%) became prominent.

Table 1. Descriptive Knowledge for Tourism Employees (n=392)

Variables	***Groups***	***f***	***%***	***Cumulative %***
Gender	Female	151	38,5	38,5
	Male	241	61,5	100,0
Age	19-25	76	44,9	44,9
	26-32	87	22,2	67,1
	33-39	70	17,9	84,9
	40 and above	59	15,1	100,0
Educational Status	Primary Education	50	12,8	12,8
	Secondary Education	134	34,2	46,9
	Two-year degree	101	25,8	72,7
	Undergraduate	107	27,3	100,0
Monthly Income	1000 TL and under	54	13,8	13,8
	1001-2000 TL	250	63,8	77,6
	2001-3000 TL	62	15,8	93,4
	3001 TL and above	26	6,6	100,0
Professional Experience	1 year and under	60	15,3	15,3
	2-5 years	167	42,6	57,9
	6-9 years	92	23,5	81,4
	10 years and above	73	18,6	100,0
Type of Enterprise	Hotel	117	29,8	29,8
	Restaurant	177	45,2	75,0
	Cafeteria	76	19,4	94,4
	Pastry shop	22	5,6	100,0
Task	Food and Beverage Preparation	93	23,7	23,7
	Food and Beverage Presentation	125	31,9	55,6
	Food and Beverage Preparation and Presentation	174	44,4	100,0
Food Safety Knowledge	I joined the courses	158	40,3	40,3
	I received training	114	29,1	69,4
	I have no idea	120	30,6	100,0

Within the scope of the analysis of the data collected within the scope of the findings of the research "food safety knowledge", the food safety knowledge average for tourism employees was determined as 4.05 out of 5 and Table 2 shows the results for the arithmetic averages and standard deviations related to food safety knowledge judgements.

Table 2. Knowledge Level of Food Safety of Tourism Employees

Judgments Concerning Food Safety Knowledge	***Avg.***	***s.d.***
It is important to wash your hands after using the toilet.	4,89	0,41
It is important to wash your hands before preparing food.	4,88	0,38
It is important to wash your hands after you touch the trash.	4,79	0,51
It is important to wash your hands after touching poultry meat.	4,74	0,55
It is important to wash hands after sneezing.	4,73	0,58
It is important to wash your hands after working with red raw meat.	4,63	0,67
It is important to wash your hands after you have taken something falling.	4,60	0,70
It is important to wash your hand after touching the money.	4,47	0,81
It is important to remove the hands after cleaning the tables.	4,47	0,76
For food safety it is important that hands wash the soap for at least 20 seconds.	4,41	0,87
It is important to wear disposable gloves before touching the kitchen.	4,35	0,79
Foods in the refrigerator should be stored so that they do not touch each other.	4,32	0,95
Time is an important factor in controlling the growth of bacteria.	4,32	0,99
Temperature is an important factor in controlling the growth of bacteria.	4,27	0,99
It is important to wash hands after touching any part of the body.	4,25	1,03
The same cutting board should not be used without cutting raw meat and vegetables.	4,21	1,24
Smoking should not be used in food services.	4,19	1,22
The working temperature for the freezer is -18 ° C.	4,13	1,05
It is important to wash hands after removing disposable gloves.	4,05	1,10
Should not be worked on food services if any finger cuts	3,97	1,20
The same knife should not be used to cut raw meat and vegetables.	3,96	1,45
Dangerous temperatures for potentially dangerous foods range from 5-60 ° C.	3,89	1,06
The water temperature should be above 60 ° C before food is put into the kitchen.	3,83	1,09
Working temperature for refrigerator is 1-5 ° C range.	3,82	1,14
Frozen meats can be thawed on the inside of the refrigerator.	3,71	1,27
It is important to wash hands before wearing disposable gloves.	3,70	1,23
Cooked food should be stored on the top shelf of raw food in the refrigerator	3,70	1,22
It is important to use a probe thermometer to measure cooking temperature in the meat.	3,68	1,16
Food should be refrigerated for at least 2 hours while being kept for service.	3,60	1,18
The temperature above 60 ° C kills bacteria in the food.	3,59	1,26
The temperature of the cooking and reheating of the meats is 74 ° C.	3,51	1,10
Frozen meats should not be thawed in an open container on the kitchen counter.	3,50	1,43
Hepatitis A is an infectious disease transmitted by food.	3,34	1,40
Frozen meats can be thawed under running tap water.	2,89	1,45
If you feel good about your cold, you can work in food services.	2,47	1,36
Food Safety Knowledge Average	**4,05**	**0,36**

Within the scope of Table 2, it would be appropriate to state that the employees who prepare or present food for tourism in the provinces of Karabük, Kastamonu, Bartın and Sinop have sufficient knowledge on food safety with an average of 4.05. However, it can be said that food employees need knowledge in the judgments that are below the average of 4.05 (“working in food services with any finger cut”, “using the same knife to cut raw meat, poultry and vegetables”, “potentially dangerous foods for dangerous temperatures”, “temperature of water before placing food in the kitchen”, “working temperature for refrigerator”, “thawing frozen meats”, “hand washing hands for disposable gloves”, “storing raw foods in the upper shelf”, “freezing the cooked food within two hours”, “freezing the bacteria”, “cooking and reheating temperature of meat,” “food borne disease Hepatitis” and “working in food services with

flu"). These results show that periodic scientific research is of great importance for enterprise personnel such as restaurants, patisseries, bars, buffets, banquet halls, discos, night clubs that provide food and beverage services in the provinces of Karabük, Kastamonu, Bartın and Sinop. It should be noted that scientific research is very helpful in the development of pro-active (prevent error recurrence) actions and in identifying the current situation. In particular, taking into account the results of these researches by local authorities and leading corrective training for food employees will support the development of the employees and create significant outputs for regional tourism.

T-test and ANOVA analyses were carried out in the provinces of Karabük, Kastamonu, Bartın and Sinop in order to determine whether there is a significant difference between demographic and other characteristics of the employees who prepare or present food for tourism purposes and food safety data, and the differences of tourism employees in food safety are shaped as shown in Table 3.

Table 3. Differences between Tourism Employees and Food Safety Knowledge

Variables	***Groups***	*n*	$\bar{x}$	σ	***t/F***	***p***	***Tukey***
Gender	Female	151	4,09	0,35	1,742	0,082	
	Male	241	4,02	0,36			
Age	19-25 (a)	76	4,01	0,34	10,876	**0,000***	**a-c** **a-d** **b-c** **b-d**
	26-32 (b)	87	3,93	0,39			
	33-39 (c)	70	4,17	0,34			
	40 and above	59	4,20	0,29			
Educational Status	Primary Education (a)	50	4,17	0,37	2,147	0,094	
	Secondary Education (b)	134	4,02	0,38			
	Two-year degree (c)	101	4,04	0,33			
	Undergraduate (d)	107	4,03	0,33			
Monthly Income	1000 TL and under	54	3,93	0,36	3,515	**0,015***	**a-d**
	1001-2000 TL	250	4,05	0,36			
	2001-3000 TL	62	4,08	0,31			
	3001 TL and above	26	4,20	0,35			
Professional Experience	1 year and under	60	3,95	0,41	7,448	**0,000***	**a-d** **b-d** **c-d**
	2-5 years	167	4,02	0,35			
	6-9 years	92	4,04	0,35			
	10 years and above	73	4,21	0,29			
Type of Enterprise	Hotel	117	4,05	0,36	1,799	0,147	
	Restaurant	177	4,07	0,34			
	cafeteria	76	3,97	0,37			
	pastry shop	22	4,14	0,33			
Task	Preparation of Food & Beverage (a)	93	4,04	0,41	3,333	**0,037***	**b-c**
	Serve of Food & Beverage (b)	125	3,99	0,36			
	Serve and Preparation of Food & Beverage (c)	174	4,10	0,32			
Food Safety Knowledge	I joined the courses (a)	158	4,10	0,36	4,412	**0,013***	**a-c**
	I received training (b)	114	4,07	0,37			
	I have no idea (c)	120	3,97	0,33			

*p<0,05

As shown in Table 3, there are significant statistical differences between the food safety knowledge and the age, monthly income status, professional experience, task and food safety knowledge levels of tourism employees. The differences between the age of employees and food safety knowledge (p=0.000, p<0.05) occurred between the 19-25 age group (x =4.01) and the 26-32 age group (x =3.93) and the 40 age group (x =4.20). In the context of these results, it can be said that the knowledge of food safety of employees over the age of middle ages is higher than those of young employees. In this context, tourism enterprises need to employ not only young people but also experienced

employees for food safety. The differences between the monthly income situation and food safety knowledge of the employees (p=0,000, p<0, 05) are between the monthly income earning employees below TL1000 (x =3.93) and TL3001 and above (x =4.20). This finding can be considered when the income situation of the employee increases, as he / she looks after his / her job more, fulfils the requirements of the job more and develops himself / herself. The differences between the occupational experience of the employees and the knowledge of food safety (p=0.000, p<0.05) occurred between 1 year and below (x =3.95), 2-5 years (x =4.002) and 6-9 years (x =4.004) and 10 years and over (x =4.21). These results show that the professional experience of food safety knowledge is of the same importance as that of age. It is an important requirement to employ experienced individuals to ensure food safety. The difference between the tasks undertaken by the employees in tourism enterprises and the food safety knowledge (p=0.000, p<0.05) was observed between food and beverage providers (x =3.99) and both employees who take part in preparation and presentation (x =4.10). This result demonstrates the importance of knowing how food is prepared for increasing food safety knowledge. In this context, it will be an important step in the food safety process to make food – beverage presentation employees understand how foods are prepared. The differences between food safety knowledge levels of employees and food safety knowledge (p=0.000, p<0.05) occurred between those who took courses in the form of short-term training for food safety in advance (x =4, 10) and those who answered that they have no knowledge (x =3.97). These results show how necessary the prerequisite for participating in the food safety course is to enable staff working in food preparation or presentation to work in a food enterprise. This prerequisite for tourism enterprises must be transformed into an indispensable organizational culture. Because, a food and beverage service unit is responsible for all services ranging from the purchase of food and beverage products in accordance with consumption, storage, preparation in hygienic conditions and the provision of edible form to the guest with the ability to meet the nutritional needs of their guests.

Observation technique was used to determine the practices of tourism employees towards food safety and in the scope of the observation form developed for the research, practices in the personal hygiene, clean keeping, cross contamination, right cooking, protection and storage subscales of employees were determined as shown in Table 4, Table 5, Table 6, Table 7 and Table 8 according to the conditions of error time, employee qualification status and number of customers. Food safety practices in the context of personal hygiene of tourism employees are directly related to lunch times (40%) and insufficient number of employees (39%), as shown in Table 1. There is no relationship between the number of customers and the display of personal hygiene practices. The most common practices in personal hygiene are not wearing gloves (73 people), not washing hands after touching money with bare hands (60 people), and working in non-clean work clothes (50 people). These practices are followed with food preparation (41 people) by wearing gloves in only one hand.

Table 4. Food Safety Practices Observed in The Context of Personal Hygiene

Food Safety Practices	***Number of person who made mistake***	***Mistake Time***			***Qualification status of Employees***			***The Number of Customers***		
		Morning	***At noon***	***Evening***	***Inadequate***	***Partial adequate***	***Adaquate***	***Little***	***Midle***	***Vary***
Working with non-clean work clothes	50	10	16	24	10	20	20	20	13	17
Wiping hands to uniform while working	5	1	4	-	5	-	-	2	-	3
Sneezing / coughing made into the insider side of the hand instead of outer side	8	3	3	2	4	4	-	2	4	2
Hair handling	13	-	10	3	13	-	-	8	2	3
Not wearing gloves	73	41	9	23	33	20	20	23	22	28
Going to WC with job slipper	2	1	1	-	2	-	-	-	2	-
Going to toilet with working clothes such as cap	15	2	5	8	7	4	4	4	9	2
Do not wash hand while changing gloves	40	5	22	13	20	10	10	-	20	20
Do not wash your hands after touching mpney with the bare hands	60	20	33	7	26	12	22	31	19	10
Working with uncut tall fingernails	12	5	3	4	2	5	5	2	5	5
Continue to work without hand after loving pets like cats, dogs and birds	5	2	2	1	1	1	3	3	1	1
Preparing food by wearing only one glove	41	20	20	1	12	17	12	21	10	10
Continue to work without washing hands after you sweep or mop places	24	10	12	2	2	22	-	6	8	10
Total	**348**	**120** **%35**	**140** **%40**	**88** **%25**	**137** **%39**	**115** **%33**	**96** **%28**	**122** **%35**	**115** **%33**	**111** **%32**

The practices made by tourism employees in the clean keeping dimension occur during (Table 5); lunch hours (47%), in the case of partly sufficient number of employees (42%) and in cases where the number of customers is low (40%). The following are the most common practices in keeping clean: cleaning/wiping multiple tables with the same wet cloth (78 people), wiping many different materials with the same dry cloth (cups, tables, plates, etc.) (75 people) and cleaning of the counter and the stove with cloth instead of paper towel (53 people). These practices are followed with dropping service materials (cutlery, spoons, knives, etc.) to the ground and putting it back instead of sending them to dishwashing (22 people).

Table 5. Food Safety Practices Observed in Clean Keeping

Food Safety Practices	***Number of person who made mistak***	***Mistake Time***			***Qualification status of Employees***				***The Number of Customers***	
		Morning	***At Noon***	***Evening***	***Inadequate***	***Parial Inadequate***	***Adaquate***	***Little***	***Middle***	***Vary***
Opening the service before the guests come to the restaurant and dust of service materials	11	5	5	1	-	5	6	11	-	-
Not cleaning of spider nets and fly in places where service halls are difficult to access	5	2	2	1	2	1	2	-	2	3
Multiple table cleaning / wiping with the same wet cloth	78	13	53	12	20	40	18	32	20	26
Carrying the plates and glasses into the fingers	15	6	4	5	7	7	1	8	2	5
Keeping the spoon, fork and knife in a non-hygienic manner	23	5	8	10	5	10	8	13	2	8
Handing cups without using a tray	12	4	6	2	6	3	3	4	4	4
Wiping many different materials (glasses, tables, plates, etc.) with the same drying cloth	75	35	40	-	20	40	15	33	22	20
Using the service materials (forks, spoons, knives, etc.) that they dropped	22	15	5	2	10	10	2	5	15	2
Placing the cutting blades and tools between the wall and the countertop	8	4	1	3	3	2	3	1	3	4
Inadequate cleansing of the mouth parts of the menue sets (menaj) such as salt, pepper, pomegranate syrup, olive oil	32	15	13	4	15	5	12	12	10	10
Using fabric cloth instead of paper towels when cleaning the countertop and cooker	53	21	21	11	15	18	20	13	23	17
Welcoming their guests to the kitchen without wearing overshoes	4	1	1	2	1	1	2	2	1	1
		126	**159**	**53**	**104**	**142**	**92**	**134**	**104**	**100**
Total	**338**	**%37**	**%47**	**%16**	**%31**	**%42**	**%27**	**%40**	**%31**	**%29**

For tourism employees, the practices in the cross-contamination dimension (contamination of bacterium/bacteria from other foods or non-food bacteria) were determined as shown in Table 6. As shown in Table 18, it is observed that the number of practices employees make in the scope of cross-contamination is increasing at noon (39%) and when there are partly enough employees (34%) and when the number of customers in the moderate density (38%). The most common practices in cross-contamination are to use the same cutting board for chopping different foods (85 people), to work with the dirty cutting board (82 people) and to use the same knife for chopping different foods

(55 people). These practices are followed by putting sugar into a glass with bare hands (25 people) and not washing hands after touching eggs (13 people).

Table 6. Food Safety Practices Observed in Cross Contamination

		Mistake Time			***Qualification status of Employees***			***The Number of Customers***		
Food Safety Practices	***Number of oerson who made***	***Morning***	***At Noon***	***Evening***	***Inadequate***	***Partial Inadequate***	***Adaquate***	***Little***	***Midle***	***Vary***
Eating and drinking something during work	12	8	2	2	4	4	4	8	2	2
Smoking during work	6	1	4	1	1	3	2	2	2	2
Tasting / eating a small portion of the food while serving the dish from the kitchen to the guest	3	-	2	1	2	1	-	1	1	1
Working with cut and wound hands	10	4	4	2	3	4	3	4	4	2
Not washing hands after touching eggs	13	5	3	5	5	5	3	3	8	2
Not changing gloves by touching the cash with a disposable glove	11	-	11	-	2	9	-	-	11	-
Puting candy in a glass with bare hands	25	12	8	5	7	4	14	4	9	12
Putting ice in the glass with bare hands	8	-	6	2	1	3	4	-	4	4
Working with dirty cutting board	82	20	32	30	20	42	20	32	19	31
Using the same cutting board for different food cutting jobs	85	25	35	25	14	16	55	15	45	25
Using the same knife for chopping different foods	55	25	15	15	15	15	25	30	14	11
Total	**310**	**100**	**122**	**88**	**74**	**106**	**130**	**99**	**119**	**92**
		%32	**%39**	**%29**	**%24**	**%34**	**%42**	**%32**	**%38**	**%30**

The practices that the tourism workshops exhibited in the accurate cooking of foods have emerged as shown in Table 7. As shown in Table 7, the accurate cooking practices of the employees are concentrated at lunch hours (64%) and when there are partly enough employees (41%) and in cases where there are moderate-intensity customers (51%). The most common practices in the right cooking are; presenting the meat/meatballs to the guest without fully cooked (150 people), checking whether the food is cooked with eyes, instead of a probe thermometer (105 people), cooking frozen meatballs and burgers while they are still frost (50 people).

Table 7. Food Safety Practices Observed in Accurate Cooking

Fod Safety Practices	***Number of Person who made***	***Mistake Time***			***Qualification status of Employees***			***The Number of Customers***		
		Morning	***At Noon***	***Evening***	***Inadequate***	***Oartial Inadequate***	***Adequate***	***Little***	***Middle***	***Vary***
Cooking frozen meatballs and burgers while they are still frost	50	-	41	9	10	26	14	10	16	24
Checking whether the food is cooked with eyes, instead of a probe thermometer	105	-	75	30	35	35	35	10	80	15
Presenting the meat/meatballs to the guest without fully cooked	150	-	80	70	30	65	55	40	61	49
	305	**-**	**196**	**109**	**75**	**126**	**104**	**60**	**157**	**88**
Total		**%0**	**%64**	**%36**	**%25**	**%41**	**%34**	**%20**	**%51**	**%29**

The practices exhibited by tourism employees in the preservation and storage of food services were determined as shown in Table 8. As shown in Table 8, the practices observed in the protection and storage of employees are observed in the morning hours (43%), when there are adequate (35%) and partly adequate (35%) employees and at times (59%) with few customers. The most common practices in protection and storage are: leaving food to come into contact with the ground while waiting for cooking (52 people), leaving cooked food on stove to cool down before placing it in the refrigerator (51 people), and storing/waiting ready-to-eat food ready in the fridge with open lid (40 people). These practices are followed by waiting the food in room temperature for more than two hours (55 people) before placing in the refrigerator and not keeping food cooked on the top shelf of raw foods in the refrigerator (23 people).

Table 8. Food Safety Practices Observed in The Scope of Protection and Storage

Food Safety Practices	***The Number of person who***	***Mistake Time***			***Qualification status of Employees***			***Tne Number of Customers***		
		Morning	***At Noon***	***Evening***	***Inadequate***	***Partial Adequate***	***Adequate***	***Little***	***Middle***	***Vary***
Leaving cooked food on stove to cool down before placing it in the refrigerator	51	30	11	10	10	20	21	30	10	11
Waiting the food in room temperature for more than two hours	35	8	17	10	5	15	15	25	5	5
Placing more food in the refrigerator than it can store	18	8	8	2	4	4	10	12	2	4
Placing food in the refrigerator as touching each other	11	3	7	1	-	3	8	8	2	1
Not keeping food cooked on the top shelf of raw foods in the refrigerator	23	6	6	11	10	5	8	5	15	3
Storing/waiting ready-to-eat food ready in the fridge with open lid	40	10	11	19	10	23	7	10	21	9

Table 8. Food Safety Practices Observed in The Scope of Protection and Storage (continuation)

Leaving food to come into contact with the ground while waiting for cooking	52	34	16	2	30	10	12	45	5	2
	230	**99**	**76**	**55**	**69**	**80**	**81**	**135**	**60**	**35**
Total		**%43**	**%33**	**%24**	**%30**	**%35**	**%35**	**%59**	**%26**	**%15**

Conclusion and Recommendations

Food safety is a scientific discipline that explains the preparation, storage and presentation of food to prevent foodborne diseases. For this reason, it contains a series of routines that must be followed to avoid potentially serious health risks. However, this research has shown that many young people working in food services are deprived of the necessary behaviours to protect themselves from foodborne illnesses. Employees in the tourism sector are unaware of the basic food safety practices expected by tourists. According to the findings obtained by the observation technique carried out within the scope of the research, tourism employees have practices in the sub-dimensions of personal hygiene, clean keeping, preventing cross contamination, cooking at the correct temperature, food protection and storage, reuse of stored foods.

The most frequent practices of the employees working in the food and beverage service units in the tourism sector are in the priority of personal hygiene, clean keeping, avoiding cross contamination, not implementing the correct cooking process and not keeping/protecting food properly. Within the scope of personal hygiene, working with clothes that are not clean, not washing hands after touching money and not washing hands before and after wearing hand gloves has been prominent practices. In the context of clean keeping, the cleaning of multiple tables with the same wet cloth, the cleaning of many equipment with the same dry cloth, and the cleaning of the equipment only activities have been prominent and the disinfection process has been neglected. In the context of cross contamination, using the same cutting board and knife in many tasks, putting sugar/ice into a glass with bare hands, and eating and drinking something during work are the leading practices. In the context of proper cooking, the failure to use probe thermometers to ensure that food reaches the appropriate temperature has been the most important error. In the context of protection and storage, thawing frozen food, placing food in the fridge over its capacity and keeping food in contact with the ground are the main practices.

These results indicate that in the research area, in order to achieve the desired food safety in tourism, employees need to be supported by frequent inspections and trainings in order to ensure that they exhibit accurate and responsible behaviour within the scope of food safety. However, it should be appropriate for food and beverage service units to be equipped with warning signs for food safety, such as “wash your hands after using the toilet”, “wash knife after finishing cutting” etc. Food and beverage production is a series of activities aimed at increasing the taste of food, facilitating digestion and destroying harmful organisms that may threaten the health of people. In this process, there are a number of factors for bacterial food poisoning and the common causes of foodborne diseases such as inadequate cooking of foods, insufficient thawing of foods before cooking, very early preparation of foods, insufficient heating of cooked foods, contamination of cooked foods, improper storage of foods, waiting for a long time in the temperature range of 4-60 °C, personal hygiene of employees, employees caught in intestinal diseases, consumption of raw foods, consumption of leftover food. Employees working in tourism have difficulties in meeting these factors that are necessary for food safety, which shows the importance of the issue. Local authorities, health authorities and food

service managers in the development and implementation of food safety policies in tourism can benefit from the findings of this study.

The results obtained in this research are limited to the views of tourism employees in April-September 2017 in the provinces of Karabük, Kastamonu, Bartın and Sinop and to the observations of employees in this period. In different places and times, different predictions can be made for different participants.

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