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Assessing Factors Contributing to Food Safety Culture in Retail Food Establishments

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ABSTRACT

Training employees on food safety practices has been shown to be one of the most important programs that food service establishments can implement. However, results also provide evidence that traditional approaches used to educate and train employees (such as ServSafe) may not be particularly effective, and new behavior-based approaches that include food safety education as part of the culture of the organization need to be developed. Therefore, this preliminary study was conducted to identify the factors and behaviors that constitute the food safety culture among food service workers. Food service employees (103) were surveyed using a modified version of the Food Safety Climate Tool. Participants rated 38 items by means of a 5-point Likert-type scale related to management commitment to food safety, work unit commitment to food safety, food safety training, food safety system infrastructure, and worker food safety behavior. Principal component factor and ANOVA analyses were conducted, using SPSS. Respondents reported that the most important factors for developing a food safety culture are management commitment and worker food safety behavior. Results indicate that if they create a work environment that encourages good food safety behavior and culture, food service operators may be able to reduce the risk of foodborne illness outbreaks.

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INTRODUCTION

Foodborne illness significantly affects consumers in the United States. According to The Centers for Disease Control and Prevention (CDC), an estimated 9.4 million incidences of foodborne illnesses occur each year, with 55,961 hospitalizations and 1,351 deaths *(17)*. The CDC evaluated all reported cases of foodborne illness in the U.S. between 1993 and 1997 and found more than 90 percent were a result of improper food handling practices, which involved coming to work when sick, bare hand contact and time and temperature abuse *(2)*. In examining factors that have led to foodborne diseases in the U.S., Howes *(11)* found that improper food handler practices in both food service establishments and consumer homes accounted for approximately 97 percent of foodborne illnesses. One of the most important procedures that retail food establishments (RFEs) can implement to decrease the chance of foodborne illness is training employees on proper food handling practices. In addition, establishments need to take into consideration the best way to train employees so that this knowledge translates not only into practice but also into changes in behavior. The U.S.

Food and Drug Administration's (FDA) trend analysis for the years 1998–2008 showed that the percentage of both fast food and full service restaurants that were out of compliance on the five most common risk factors had improved over time, but despite increased training efforts, 19% of fast food and 30% of full service restaurants were still found out of compliance for all risk factors *(19)*. More specifically, fast food and full service restaurants showed significant improvement in personal hygiene and improper holding/time temperature risk factors; however, these risk factors had lower "in compliance" percentages than the other risk factors *(19)*. The authors state that these results underscore the need for continued efforts to ensure that effective procedures, training and monitoring be both developed and implemented by the food service industry to reduce these risk factors *(19)*.

Even though training and education have been shown to be successful in increasing food safety knowledge, the knowledge gained has not always transferred over to better control of food safety risks within a retail food establishment *(14, 16)*. Changing the way employees work may be a better system to improve food safety performance. For food safety training and education to be successful, there needs to be a better understanding not only of the organizational culture of the establishment but also of the "human dimension" of the employees *(20)*.

Food safety culture, a behavior-based food safety management system, has a foundation in the scientific knowledge of human behavior as well as organizational culture and food safety. Food service managers must focus on these processes as well as their employees to create this system. Results could suggest the traditional approaches being used in the retail food industry to educate and train employees in proper food safety practices may not be as effective as once thought, and new approaches that include food safety education as part of the culture of the organization need to be developed.

As a key segment of the food industry based on the volume of both meals served and number of customers, retail food establishments must explore food safety culture as a viable approach to food safety. The National Restaurant Association (NRA) is projecting sales to be $604 billion in 2011, which accounts for approximately 4% of the gross domestic product for the U.S. This means that over 70 billion meals are served at 960,000 commercial establishments by 12.8 million employees in the U.S. each year *(13)*. The significance of these statistics lies in the fact that the increase in dollars being spent at restaurants is directly proportional to the increased risk of contracting a foodborne disease transmitted by unknowledgeable food handlers *(5)*. Little research has been conducted on food safety culture, but some food safety professionals and members of the food service industry feel that conducting this research is crucial *(8)*.

Food safety culture

Organizational culture has been described many ways, but most see it as a behavior-based system that focuses not only on the processes but also on the people and the organizational culture of the establishment. Although the concept of food safety culture is still in the developmental stages, multiple researchers have suggested that effective food safety systems and practices need to be shared by all levels of the organization, not just management, and that communication is an integral part *(1, 7, 9, 20)*. Although there is no common definition of food safety culture, Yiannas *(20)* views it as "how and what the employees in a company or organization think about food safety. It's the food safety behaviors that they routinely practice and demonstrate." Yiannas believes that employees will learn the behaviors because they are part of the organization and that employees' thoughts and behaviors will then transpire to fill the entire organization. Managers need to change the food handling behaviors of their employees so that these behaviors become a permanent fixture in the organization and not something that is the "topic of the month" *(20)*.

Griffith et al. *(8)* identified six indicators of safety culture that may be applied to food safety: management systems, leadership, communication, commitment, environment and risk awareness, perception and risk taking behavior. These researchers have gone so far as to include the food safety culture of the organization as a contributing risk factor that can increase the likelihood of a foodborne illness *(8)*. Other researchers feel that studying all facets of the food safety culture within a retail food establishment can lead to improving the compliance of employee-based behavioral practices, which in turn could lead to fewer foodborne illnesses *(6, 15)*.

Many perceived barriers have been linked to a lack of handwashing and other food handling practices in restaurants. Howells et al. *(10)* conducted focus groups of food service workers and found that time constraints, inadequate training, inconvenience, and not having enough resources were identified as barriers to them being able to perform safe food handling practices related to three areas: time/temperature control, personal hygiene, and cross contamination. Howells et al. *(10)* also suggested that when a restaurant provided training that focused only on knowledge, employees received no training that would help them to overcome these barriers. Having knowledge of food safety is not a predictor of correct performance of the task, especially with barriers such as time constraints, poor training and lack of resources to overcome. When employees working together have the same attitudes and beliefs concerning a practice, there is a better chance of conformity with the standards for that practice *(15)*. Several studies have reported on the food safety culture in food processing plants, but none have investigated its implementation in food service operations. Therefore, the objective of this study was to assess food safety practices contributing to food safety culture in food service operations.

MATERIALS AND METHODS

Participants

For the scope of this study, we aimed to recruit 100 participants from the Conrad N. Hilton College at the University of Houston. Prior to the recruitment phase, the UH Institutional Review Board (IRB) approved the observational study design and recruiting method (IRB Protocol #11454-EX). The participants consisted of 103 students majoring in

hotel and restaurant management (52 men and 51 women) enrolled in HRMA 4323: Advanced Food and Beverage Management, which is a senior level capstone restaurant management course. HRMA 4323 is an operations course in which the students actually work in all of the positions, including dishwashers, cooks, kitchen managers, hosts, bussers, servers and managers at a student-operated 150 seat full service restaurant within the college.

The "Food Safety Climate Tool," presented at the 97th International Association of Food Protection Conference, was developed by Ball, Wilcox and Colwell to measure the food safety culture of beef processing plants *(1)*. We received permission from these researchers to use their survey instrument; however, several modifications were made to focus on food service employees rather than meat processors. This modified Food Safety Climate Tool *(1)* was given to the students to complete as an "in-class" assignment, with no grade associated with its completion.

Food safety climate survey

A modified version of the Food Safety Climate Tool was used to assess beliefs concerning food safety culture of employees in retail food service establishments (Appendix A). The initial food safety climate tool had been used to judge the food safety climate of employees working in food processing plants. With the help of food safety professionals and academics, we adjusted the survey to be more appropriate for food service employees. Questions specific to processing plants were either removed from the survey or adjusted to better relate to food service employees. For example, the statement "Management will only allow product to be shipped to customers if it's in full conformance with food safety program requirements" was removed, and the statement "When the restaurant is busy, I still wash my hands as I should" was added. Participants made their ratings on 38 items, using a 5-point Likert-type scale, anchored by 1 (strongly disagree) and 5 (strongly agree). Questions were related to five key areas: (1) Management commitment to food safety (including leadership and resource allocation); (2) Work unit commitment to food safety (including supervisor, co-worker and personal commitment); (3) Food safety training; (4) Infrastructure for food safety (including food safety management system, food safety personnel and production practices; and (5) Worker food safety behavior. Demographic questions related to years working in the industry, food safety training, food safety certification, and personal demographics (age, gender, and ethnicity) were included.

Data analysis

Means, standard deviations, and frequencies were computed for all variables. Principal component factor analyses were conducted, using SPSS for Windows (version 18, Chicago, IL). Once principal components were identified, ANOVAs were conducted with Years in Food Service Industry, Food Safety Training, Food Safety Certification, Current Position, Years in Current Position, Gender, Ethnicity, and Education as independent variables. Food Safety Practices data was transformed into three separate variables as Employee practices, Management practices and Personal practices and were used as the dependent variables.

RESULTS

Participants

Most participants had some college or an associate degree (59%) or an undergraduate degree (28%). The ethnicity of the participants was diverse, with 34% white/non-Hispanic, 32% Asian/Pacific Islander, 15% Hispanic, 13% African-American, 4% Native American and 3% other. The mean age of the participants was 24.6 years. The majority of participants (71%) held a part- or full-time job in food service and had one to ten years (mean 1.98 years) of experience, although 70% had been at their current job less than one year. Work positions included Server (28%), Host (28%), Cook/Line Cook (11%), Dishwasher, (5%), Assistant Manager (4%), Kitchen Manager (4%), Food Prep (2%), and Food Service Attendant (2%). Most participants had received some form of food safety training (95.1%) and had received a food safety training certificate (92%).

Factor analysis

Means, standard deviations and frequencies were computed for all variables (Table 1). Initially, the factorability of the 38 Food Safety Culture items was examined. The analysis matrices showed considerable cross loading; therefore, additional analysis was conducted. The first two items (Management encourages employees to do things that are against the rules and Management looks the other way when employees do not follow the rules) were removed because the meaning of the questions were duplicated in previous statements, so that the results would be the same. These items were previously asked in a positive manner. After further analysis, an additional 7 items were eliminated because they did not contribute to a simple factor structure and failed to have the minimum criterion of having a primary factor loading of 0.4.

A principle-components factor analysis of the remaining 29 items, using promax rotations (which allows the researcher to deviate from orthogonal to achieve a more simple structure) was conducted, with two factors, management commitment and worker food safety behavior, explaining 54% of the variance. All items had primary factor loadings ranging from 0.950 to 0.429. (Table 2) and loaded onto these two factors. ANOVAs were also performed to see if demographic factors (years working in the industry, prior food safety training, whether they had a food safety certification, and years at their present job) had a significant effect on food safety culture. The analysis showed that these factors had no significant effect on food safety culture.

DISCUSSION

Development of a food safety culture not only encompasses food safety training but, more importantly, focuses on both the organization as a whole and the individuals within the organization. Several studies have investigated the impact of mandatory training for all food handlers *(12, 15)* and reported that even though a manager is knowledgeable about food safety and that, in turn, employees have better food handling knowledge, instituting mandatory

TABLE 1. Means ± standard deviations (SD) of food safety practices (n = 103)

Role	Means
Employees	
Employees encourage each other to follow food safety rules.	3.77 ± 0.98
Employees take responsibility for proper food handling in their work areas.	4.17 ± 4.12
Employees will tell a manager when a food safety problem happens.	4.03 ± 1.00
Even if no one was looking, employees would follow all the food safety rules.	3.97 ± 1.22
Food safety rules are hard for employees to understand.	3.41 ± 1.18
Employees receive the proper training to follow the food safety rules.	4.50 ± 5.03
New employees receive all the training they need to perform their jobs according to food safety rules.	3.97 ± 1.01
Management	
Management is committed to serving safe food.	2.47 ± 1.41
Management makes sure employees follow food safety rules all the time.	4.08 ± 1.03
Management stresses food safety rules even when the restaurant is busy.	3.90 ± 1.04
Management makes sure employees have the equipment and/or tools needed to follow the food safety rules.	4.07 ± 0.99
Management often checks to see that all employees are following the food safety rules.	3.55 ± 1.07
Management praises employees who pay special attention to food safety.	3.25 ± 1.23
Management sometimes encourages employees to do things that are against the food safety rules.	1.94 ± 1.17
Management sometimes looks the other way when employees are not following food safety rules.	2.07 ± 1.16
Even if no one was looking, management would follow all the food safety rules.	3.90 ± 1.09
Management asks for help from employees to improve our food safety program.	3.68 ± 1.12
The food safety training provided gives us the necessary skills and/or knowledge to follow the food safety rules.	4.08 ± 0.97
Self	
I know when I should wash my hands to protect the food from contamination.	4.58 ± 0.73
I know why I should wash my hands to protect the food from contamination.	4.71 ± 0.72
When the restaurant is busy, I still wash my hands as much as I should.	3.97 ± 1.10
I always consider food safety when I am doing my job.	4.11 ± 1.01
I believe it is important for me to follow all the food safety rules, not just the most important ones.	4.15 ± 1.03
I believe that how well I do my job can affect the safety of the food the customer receives.	4.31 ± 0.86
I completely support our food safety program.	4.37 ± 0.93
I know food safety problems can happen if I do not do my job correctly.	4.41 ± 0.89
I know when I should change my gloves to protect the food from contamination.	4.47 ± 0.86
I know why I should change my gloves to protect the food from contamination	4.50 ± 0.85
Management at this restaurant follows the food safety rules.	4.18 ± 0.78
Employees at this restaurant follow the food safety rules.	3.97 ± 0.83
Employees do things that contaminate food by not following food safety rules.	2.63 ± 1.55
Employees chew gum or eat snacks in the kitchen.	2.52 ± 1.32
Employees are not washing their hands when they can get away with it.	2.64 ± 1.27

training for all food handlers is not consistently associated with improved employee behavior *(15)*. This study did not inquire if employees had a manager who had significant food safety training. One possible reason for these results is that the expected goal of food safety training is to improve food handlers' compliance with food safety guidelines, which is in essence their ability to "follow the rules." Food safety culture, on the other hand, focuses on proper food handling practices as a way of doing business, or "this is how we do things," with a goal of creating a behavior-based food safety compliance system with contributions from employees at all levels *(8, 20)*.

Participants identified the role of management as a critical factor for a food safety culture. This implies that food service employees want not only consistency within the organization, but accountability by management. Management needs to set the example and also champion the food safety cause. Employees indicated that it is important for management to be actively involved within the organization, which can be demonstrated by the following factors: stressing food safety even when the restaurant is busy, keeping employees focused on food safety, checking on employees to ensure that proper food safety behavior is being practiced, having adequate food safety tools for employees, making sure that management follows all of the food safety rules, and making sure that management visibly supports the food safety culture by "walking the walk" (Table 1). These conclusions are similar to those of Griffith *(6)* who reported that to produce safe food consistently, management has to take an active role to ensure that the consistent production of safe food is not an accident.

There are some differences between other food safety culture research and the current study. Ball et al. *(1)* found that many management factors dealing with the commitment to food safety loaded on elements of the work unit (employees). Conversely, this study found that

TABLE 2. Factors contributing to food safety culture

Principal Components	Management Commitment	Worker Food Safety Behavior
Management stresses food safety even when the restaurant is busy	.882	
Management shows leadership by keeping employees focused on food safety	.853	
Management often checks to see that all employees are following food safety rules	.829	
Management makes sure employees follow food safety rules all the time	.809	
Management provides adequate tools for training and/or education for food safety	.809	
Management follows all the food safety rules in the restaurant	.806	
Management visibly shows support for food safety ("walks the talk")	.795	
Management encourages employees to report all food safety problems	.787	
The organization learns and makes changes when mistakes are found in food safety	.762	
Management believes that food safety is very important	.729	
Management makes sure employees have the equipment and/or tools needed to follow the food safety rules	.725	
Management asks for help from employees to improve our food safety program	.698	
Employees will tell a manager when a food safety problem happens	.691	
Even if no one is looking, employees would follow all of the food safety rules	.678	
Management praises employees who pay special attention to food safety	.619	
Employees take responsibility for proper food handling in their work areas	.568	
New employees receive all the training they need to perform their jobs according to food safety rules	.563	
Equipment is designed to allow for proper cleaning	.552	
Employees are committed to the food safety program	.548	
Even if no one is looking, management would follow all the food safety rules	.518	
The pest control program is effective so there is no sign of rodents and/or insects in the restaurant	.429	
I know why I should wash my hands to protect the food from contamination		.950
I know why I should change my gloves to protect food from contamination		.891
I know when I should wash my hands to protect food from contamination		.864
I know when I should change my gloves to protect food from contamination		.792
I completely support our food safety program		.701
I believe that how well I do my job cab affect the safety of the food the customer receives		.613
When the restaurant is busy, I still wash my hands as much as I should		.450

employee factors (work unit) loaded more on the management commitment to food safety. Some of these differences may be because the study by Ball et al. *(1)* involved workers in food processing plants, in contrast to the current study with RFE employees. RFE employees may tend to look to their managers or supervisors to provide the necessary food safety information to perform their jobs and also to help create a strong food safety culture within the establishment.

In this study, participants also reported a strong sense of personal responsibility for food handling practices as a key component of a food safety culture. Personal knowledge and practice of proper handwashing and glove use were reported as key factors. Other key factors were personal support and beliefs that one's actions can affect the safety of the food customers. This is important because employee actions have the largest impact on food safety and can greatly increase or decrease the risk of foodborne illness outbreaks *(8, 10)*. Studies have described instances (both observation studies of employees and self-reporting) in which food handler actions do not comply with known safe food handling practices *(4, 7, 16, 18)*.

Griffith states that the attitudes and beliefs concerning food safety culture within an organization is almost entirely dependent on management's leadership and motivation, how food safety is communicated to the employees, and how well the employees trust what they hear from management. This is also consistent with the findings of this study, in which we found that employees rely on the food safety knowledge of management, to whom they look for support.

Food service employees may agree with these indicators of safety culture as being critical areas but see them as two factors (overlaps of leadership and communication). Management needs to incorporate the other components (commitment, environment, perception and risk taking behavior) into daily routines and current practices. Our data suggests that the two most important factors for developing a food safety culture in food service operations are management commitment and worker food safety behavior. These findings are consistent with Chapman et al. *(3)*. Operators need to realize that possession by employees of food safety knowledge does not mean

that proper food handling practices will be followed. As stated by Griffith et al. *(8)*, food safety culture needs to improve the actual food handling performances by employees by integrating knowledge with values, behaviors and beliefs. Food safety culture needs to be a shared attitude by all employees, especially new employees who tend to follow the "dominant behaviors" found in the organization.

Because this was a preliminary study examining use of a food safety culture tool for food service establishments, our future research will use full-time employees working in the industry in addition to student workers. Future research will investigate what constitutes "best practices" of food safety culture from the perspective of food handlers themselves, and then use this information to develop as assessment tool for creating a training program designed specifically to translate this knowledge into behavior-based practices.

Based on what we found, food service operators should continue to focus their efforts and commitment on food safety and, during the hiring process, screen for employees who have a strong work ethic and who take responsibility for their own actions. Selective screening for work ethic is related to less monitoring and greater use of high involvement work practices that are imperative to food safety. By creating a work environment that encourages good food safety behavior, food service operations can create a strong food safety culture and in turn reduce the risk of foodborne illness outbreaks.

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Appendix A

Part A: We would like to know how much you agree or disagree with each statement. To do this, draw a circle around one of the numbers beside each statement.

Use the following scale from 1 to 5:
1 = disagree strongly
2 = disagree just a little
3 = neutral—you do not agree or disagree
4 = agree
5 = agree strongly

We would like you to think about a number of statements about situations in restaurants. Please think about this restaurant and indicate how strongly you agree or disagree with each statement. Remember that we are asking your opinions about this workplace and the people working in it.

Note: When we say "food safety rules," we mean personal practices such as wearing a hairnet, removing jewelry, washing hands, as well as following specific work procedures to keep food safe for consumption.

A. Food Safety Practices	**Strongly disagree**				**Strongly agree**
1. Employees are committed to the food safety program.	1	2	3	4	5
2. Employees encourage each other to follow food safety rules.	1	2	3	4	5
3. Employees take responsibility for proper food handling in their work areas.	1	2	3	4	5
4. Employees will tell a manager when a food safety problem happens.	1	2	3	4	5
5. Even if no one was looking, employees would follow all the food safety rules.	1	2	3	4	5
6. Food safety rules are hard for employees to understand.	1	2	3	4	5
7. Management is committed to serving safe food.	1	2	3	4	5
8. Management makes sure employees follow food safety rules all the time.	1	2	3	4	5
9. Management stresses food safety rules even when the restaurant is busy.	1	2	3	4	5
10. Management makes sure employees have the equipment and/or tools needed to follow the food safety rules.	1	2	3	4	5
11. Management often checks to see that all employees are following the food safety rules.	1	2	3	4	5
12. Management praises employees who pay special attention to food safety.	1	2	3	4	5
13. Management sometimes encourage employees to do things that are against the food safety rules.	1	2	3	4	5
14. Management sometimes looks the other way when employees are not following food safety rules.	1	2	3	4	5
15. Even if no one was looking, management would follow all the food safety rules.	1	2	3	4	5
16. I know when I should wash my hands to protect the food from contamination.	1	2	3	4	5
17. I know why I should wash my hands to protect the food from contamination.	1	2	3	4	5
18. When the restaurant is busy, I still wash my hands as much as I should.	1	2	3	4	5
19. Management asks for help from employees to improve our food safety program.	1	2	3	4	5
20. I always consider food safety when I am doing my job.	1	2	3	4	5
21. I believe it is important for me to follow all the food safety rules, not just the most important ones.	1	2	3	4	5
22. I believe that how well I do my job can affect the safety of the food the customer receives.	1	2	3	4	5
23. I completely support our food safety program.	1	2	3	4	5
24. I know food safety problems can happen if I do not do my job correctly.	1	2	3	4	5
25. I know when I should change my gloves to protect the food from contamination.	1	2	3	4	5
26. I know why I should change my gloves to protect the food from contamination.	1	2	3	4	5
27. Employees receive the proper training to follow the food safety rules.	1	2	3	4	5
28. New employees receive all the training they need to perform their jobs according to food safety rules.	1	2	3	4	5
29. The food safety training provided gives us the necessary skills and/or knowledge to follow the food safety rules.	1	2	3	4	5
30. Management encourages employees to report all food safety problems.	1	2	3	4	5
31. Management believes that food safety is very important.	1	2	3	4	5
32. Management shows leadership by keeping employees focused on food safety.	1	2	3	4	5
33. Management visibly shows support for food safety ("walks the talk").	1	2	3	4	5
34. Management follows all the food safety rules in the restaurant.	1	2	3	4	5
35. Management provides adequate-tools for training and/or education for food safety.	1	2	3	4	5
36. The organization learns and makes changes when mistakes are found in food safety.	1	2	3	4	5
37. Equipment is designed to allow for proper cleaning.	1	2	3	4	5
38. The pest control program is effective so there is no sign of rodents and/or insects in the restaurant.	1	2	3	4	5

Part B: We would like to know how often people do things in your workplace. For the following questions, circle the number that stands for the amount to which people in your workplace do the actions described.

Use the scale from 1 to 5 where:
1 = never
2 = very rarely
3 = rarely
4 = sometimes
5 = always

We would like you to think about a number of statements related to what people do. Think about people in your workplace. Please indicate how often people in your workplace do what is described. Remember that we are now asking for your thoughts about what actually happens.

B. With respect to what actually happens in my workplace . . .	**Never**				**Always**
1. Management at this restaurant follows the food safety rules.	1	2	3	4	5
2. Employees at this restaurant follow the food safety rules.	1	2	3	4	5
3. Employees do things that contaminate food by not following food safety rules.	1	2	3	4	5
4. Employees chew gum or eat snacks in the kitchen.	1	2	3	4	5
5. Employees do not washing their hands when they can get away with it.	1	2	3	4	5
6. Employees wear their hats or hair nets so they cover their ears and keep their hair in place.	1	2	3	4	5

Part C. Demographics

Finally, we have a few quick questions that will help us understand your input.

1. How many years have you worked in food service? [Check only one]
   - ❑ Less than 1 year
   - ❑ 1–5 years
   - ❑ 6–10 years
   - ❑ 11–15 years
   - ❑ More than 15 years

2. Have you ever had food safety training? [Check only one]
   - ❑ Yes
   - ❑ No

   If Yes, which of the following best describes the training? [Check all that apply]
   - ❑ Face-to-face class
   - ❑ Video
   - ❑ Computer/Internet
   - ❑ Printed material
   - ❑ Demonstration/Advise
   - ❑ Job orientation

3. Have you ever been certified in food safety (such as ServSafe®)? [Check only one]
   - ❑ Yes
   - ❑ No

4. How long have you been employed at your current food service establishment? [Check only one]
   - ❑ Less than 1 year
   - ❑ 1–5 years
   - ❑ 6–10 years
   - ❑ 11–15 years
   - ❑ More than 15 years

5. What is your current position title? [Check only one]
   - ❑ Kitchen manager
   - ❑ Assistant kitchen manager
   - ❑ Cook/Line cook
   - ❑ Food prep
   - ❑ Food service assistant
   - ❑ Dishwasher
   - ❑ Server
   - ❑ Other (please specify):_____

How long have you been in this position? [Check only one]

- ❑ Less than 1 year
- ❑ 1–5 years
- ❑ 6–10 years
- ❑ 11–15 years
- ❑ More than 15 years

6. In what year were you born?
   19_____

7. Gender? [Check only one]
   - ❑ Male
   - ❑ Female

8. Which of the following best describes your ethnic identification? [Check only one]
   - ❑ African-American
   - ❑ Asian/Pacific Islander
   - ❑ White/Non-Hispanic
   - ❑ Hispanic
   - ❑ Native American
   - ❑ Other (please specify) :_____

9. What is the highest level of education you have received? [Check only one]
   - ❑ Less than high school
   - ❑ Some high school
   - ❑ High school diploma
   - ❑ Vocational/Technical school
   - ❑ Some college/Associate degree
   - ❑ Undergraduate degree (B.A., B.S., etc.)
   - ❑ Other (please specify):_____

Thank you for your time and opinions. Your input will help restaurants improve their food safety programs.