

PEER-REVIEWED ARTICLE

Food Protection Trends, Vol. 36, No. 5, p. 372-383
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Food Allergy Risk Communication in Restaurants

ABSTRACT

Accommodating customers with food allergies has become a challenge for the restaurant industry as the number of individuals with food allergies increases in the U.S. In order to identify restaurant managers' risk perceptions and operational issues related to communications about food allergy risks, 16 managers from various full-service restaurants were interviewed. All interviews were audio-recorded, transcribed verbatim, coded, and reviewed by different researchers to ensure the accuracy of data coding and theme identification. Most participants ($n = 10$) were aware of the severity of food allergy reactions and the importance of avoiding cross-contacts in restaurants as a means of preventing food allergy reactions. Although risk communication is important to prevent allergic reactions, some participants ($n = 5$) perceived that customers bore more responsibility than servers when communicating allergen-free requests. Currently, only one-way communication occurred, mainly from customers with food allergies

to restaurant servers. Managers provided little training to service staff on topics related to food allergies and risk communication, and some thought such training had low significance for restaurant settings. Restaurateurs, foodservice educators, food allergy advocates, and policy makers may use these findings when developing food allergy training and strategies to prevent food allergy reactions, including fostering two-way communications in restaurants.

INTRODUCTION

Food allergies — abnormal immune responses to food — are becoming more common challenges for the U.S. restaurant industry as the number of individuals with food allergies continues to increase (7, 11). An estimated 15 million Americans have food allergies (8, 13). Considering that the ingestion of even a minute amount of food allergen can cause a severe reaction, strict avoidance of food allergens and early recognition and responses to reactions are extremely important (11, 39).

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Symptoms of food allergy reactions range from mild to severe and can be life threatening. One of the most severe allergic responses, anaphylaxis, can result in circulatory collapse, coma, and even death (28). The “Big 8” food allergens—eggs, fish, milk, peanuts, soy, shellfish, tree nuts, and wheat—are major food allergens in the U.S., triggering more than 90% of food allergy reactions (38).

For the manufacturing industry, the Food Allergen Labeling and Consumer Protection Act (FALCPA) of 2004 requires food labels on all products regulated by the U.S. Food and Drug Administration (FDA) to clearly identify ingredients or proteins derived from the major eight food allergens. The restaurant industry is not subject to these legislative and regulatory guidelines relating to the management of food allergies. At the federal level, only the FDA Food Code states that the person in charge in restaurants should have knowledge about major food allergens, cross-contacts, and symptoms of food allergy reactions (14, 15). As of 2016, only Massachusetts, Michigan, Rhode Island, and Virginia had established legislation for improving restaurant staffs’ awareness of food allergies. Several cities, including New York, NY, and St. Paul, MN, require all restaurants to display food allergy posters in staff areas (11).

Despite the various prevention strategies taken by customers with food allergies, some customers have experienced difficulty when dining out because restaurant staff did not know about food allergies, did not understand special requests, or were not aware of the severity of food allergy reactions (20, 21). Researchers found that 33% of the fatal food allergy reactions occurring in the U.S. from 2001 to 2006 were triggered by foods prepared away from home (5, 6). In one study, researchers found that 34% of customers with food allergies had experienced food allergy reactions in restaurants (41).

Miscommunication between and among restaurant staff and customers with food allergies, unexpected or hidden food allergens, and cross-contacts in food preparation areas have been recognized by customers with food allergies as major causes of food allergy reactions in restaurants (16, 20, 23). Of these, establishing proper communication may be one of the most important steps in preventing food allergy reactions in restaurants (23). In fact, many food allergy reactions occurred in restaurants because customers failed to inform restaurant staff about their food allergies (27), believing that the foods they were eating were safe (36).

Risk perception, which refers to an individual’s views of the risks involved in a particular situation, is highly relevant to the safe food-handling behaviors of foodservice employees (37). If a person perceives greater risk in terms of probability and consequence, he or she is more likely to take actions (42). Risk communication, “the process of exchanging information among interested parties about the nature, magnitude, significance, or control of a risk”

(10), is a special concern in the food safety context. The way the risk or danger is described, assessed, and managed influences how individuals or groups perceive, process, and act (17) and may prevent negative outcomes (30) such as foodborne illnesses and food allergy reactions. As a part of food safety risk management, food allergy risk communication is important for restaurants in reducing the chance of food allergy reactions when serving customers with food allergies (19).

Currently, a few food allergy training programs are available for the restaurant industry, including the ServSafe® food allergen training program and “Welcoming Guests with Food Allergies” developed by Food Allergy Research and Education (FARE) (11). Most target delivering food allergy knowledge, but few focus on improving the risk perceptions and risk communication behaviors of restaurant employees when serving customers with food allergies.

The purpose of this research was to identify current food allergy risk communication and related operational practices in restaurants, using a qualitative approach. The specific objectives were to (a) identify restaurant managers’ beliefs and perceptions about food allergy risks in their restaurants, (b) explore risk communication procedures or protocols when serving customers with food allergies, and (c) identify food allergy risk communication training needs in the restaurant industry.

METHODS

Target population and study sample selection

The research protocol was approved by the University Institutional Review Board (#7484) at Kansas State University prior to data collection. The target population of this study was managers of full-service restaurants in the U.S. According to previous risk communication researchers (26), new concepts arise rapidly from the first 10 to 15 interviews when conducting risk communication interviews. Therefore the target sample size was determined to be 15. To achieve variation within the sample, a purposive sampling method was employed to recruit managers from different types of restaurants, such as chain-operated and independently-owned restaurants. Contact information of potential participants was obtained through faculty and alumni groups from two major universities and restaurant associations in large metropolitan areas. Upon completion of the interview, each participant was offered a \$20 gift card as a token of appreciation for his or her time and effort.

Development of interview questions

Interview questions were developed based on the literature review following the mental model risk communication interview guidelines (32) and the qualitative interview guidelines (34). A mental model is a person’s internal, personalized, contextual understanding of the world and how things work (32). The goal of the mental model interview

was to let interviewees express their opinions so researchers could gather as much information as they needed. According to the mental model interview guidelines, questions were developed to include three stages.

Stage I captured participants' general beliefs and risk perceptions about serving customers with food allergies. Stage II directed interviewees to the main body of questions and explored how interviewees communicated and managed risks. In Stage III, the researcher explored the relative significance of food allergy risks perceived by the interviewees compared with other food safety risks. In addition, each participant was asked how much training was needed regarding food allergy risk communication in the restaurant industry. As suggested by Patton (34), questions about background, experience, and opinions were included to gather information from different perspectives. Each stage consists of three to four open-ended questions followed by additional questions as needed. Prior to data collection, four food allergy, foodservice management, and risk communication experts reviewed the questionnaire and provided feedback to ensure that questions were accurately phrased and designed to achieve the research objectives.

Data collection and analysis

Once participants were identified, invitation emails were sent out to them, with explanations of the purpose of the

study and data collection procedure. For those managers who expressed willingness to participate, the researcher followed up with consent forms and scheduled telephone interviews. The procedure continued until data saturation was reached.

The telephone interviews were transcribed verbatim by professional transcribers (CabbageTreeSolutions.com). The transcripts were verified by the researcher against the audio recording before data coding and analysis. The thematic analysis method (9) was employed to identify, review, and refine the themes of transcribed interview data. In order to ensure accuracy, triangulation was applied: the interview data were coded and analyzed by different researchers and compared to ensure consistency before major themes and subthemes were identified.

RESULTS & DISCUSSION

A total of 16 managers from different full-service restaurants participated in telephone interviews. The average duration of the interviews was 17 minutes (Range: 9–29 minutes). Nine managers were from independently owned restaurants, and seven from chain-operated restaurants. The majority (n = 12) of the restaurants had more than 30 employees, and all participants (n = 16) stated that their restaurants would accommodate allergen-free orders upon customers' requests, although only one offered an allergen-free menu.

Table 1. Characteristics of restaurants where participants work (n = 16)

Characteristics	Frequency
Location	
Texas	8
Kansas	8
Restaurant classification	
Independently owned	9
Chain	7
Total number of employees	
15 or less	0
16–30	4
31–60	7
Greater than 60	5
Experienced food allergy reactions incidents in the restaurants	
Yes	2
No	14
Offered allergen-free menus or gluten-free menus in restaurants	
Allergen-free menu	1
Gluten-free menu	2

When asked if food allergy reactions had occurred in their restaurants, two participants indicated in the affirmative. One described the sudden onset of an allergic reaction to peanuts and stated “*it happened within not even five minutes [after service].*” Another participant observed an allergic reaction to shellfish from a customer who had no such prior reaction. The manager said “*when a shrimp tail touched his arm and he [his skin] immediately broke out and passed out on the floor.*” These incidents revealed that food allergy reactions could happen shortly after service and through mere contact, and it could be the very first time a customer experienced a reaction.

Major themes identified from this study are listed in [Table 2](#). In the following section, each major theme is discussed in detail.

Food allergy awareness

Most participants were aware of the symptoms and severity of food allergy reactions and identified symptoms that are mild, such as rashes, hives, swelling of the throat, and stomach discomfort, to severe, such as passing out and death. They also knew that the severity level of food allergy reactions varies among individuals. Some (n = 2) recognized that severe food allergy reactions may be triggered by airborne food allergens.

However, many participants did not recognize the differences between food allergy and food intolerance. Some participants (n = 4) considered “gluten” as one of the major food allergens. Even though both food allergy and

food intolerance are common types of adverse reactions to food, they are different with regard to causes, symptoms, and severity (3). For example, the symptoms of food allergy reactions usually occur suddenly and can be fatal, while the symptoms of food intolerances are usually expressed gradually and are not life threatening (3). Understanding the differences between food allergy and food intolerance may help restaurant managers be more vigilant about developing strategies for food allergy emergencies.

Interview participants frequently used the word “cross-contamination” when they described a situation that is actually a “cross-contact.” This result was consistent with reports of previous researchers, who found that restaurant staff was not aware of the differences between cross-contact and cross-contamination (1). Cross-contact refers to “the transfer of an allergen from a food containing an allergen to a food that does not contain the allergen,” while cross-contamination “occurs when microorganisms are transferred from one food or surface to another” (33). Understanding the meaning of cross-contact may be a key element in preventing food allergy reactions in food preparation and service areas. While proper cooking may reduce or eliminate the chance of foodborne illness even if food was cross-contaminated by microorganisms during preparation or storage, cooking does not reduce or eliminate food allergens when cross-contact occurs (12).

Food allergy training

When asked about types of food allergy training, most managers (n = 15) indicated that they included topics

Table 2. Themes identified in interviews

Major Themes	Subthemes
Food allergy awareness	Severity of food allergy reactions
	Food allergy vs. Food intolerance
	Cross-contact vs. Cross-contamination
Food allergy training	Manager training
	Employee training
Food allergy risk perception	General food allergy risk perception
	Specific food allergy risk perception
Food allergy risk communication	Information sharing
	Communication procedures
	Food allergy risk communication strategies
Food allergy risk management	Food allergy risk management
	Food allergy risk vs. Food safety risk

related to food allergies in their employee training sessions. Common topics included identifying ingredients in menu items and notifying a manager when customers request allergen-free orders.

Such training is essential for restaurant employees to manage food items that are or contain food allergens, and to teach them to recognize the signs of allergic reactions (4). Managers of chain restaurants (n = 8) or independent restaurants located in chain hotels (n = 2) were more likely to have received training and to have access to educational materials than managers of independent restaurants. These findings were consistent with results of previous studies that chain-restaurant managers were more likely to include food allergy topics as part of training and were more aware of potential issues (27).

In addition, managers with a degree in hospitality management or a culinary background had learned about food allergies from the ServSafe® certification course or other food safety-related courses. Common topics of food allergy training included “major food allergens,” “cross-

contamination (cross-contact),” and “how to handle allergy reaction.” Specifically, one chain restaurant required all managers to be certified in cardiopulmonary resuscitation (CPR) and to learn about food allergies through CPR trainings. Although most participants had taken food allergy training, two participants indicated that they had not received any.

In previous studies, a number of barriers to providing food allergy training were identified, including the high cost of training, high labor-turnover rate, time constraints, language barriers, and lack of interest in implementing food allergy training (1, 27). In this study, few managers had provided their staff with a specific and separate training session about food allergies, because they felt that food allergies hadn’t affected their business enough.

Typical food allergy training topics related to communicating with customers with food allergies are listed in Table 3. Some of the key points were:

(a) getting management involved if servers were not entirely comfortable with handling the allergen-free requests;

Table 3. Food allergy training related to communication

Topics about communication	Selected quotes
Get manager or supervisor involved	<i>“If someone has a food allergy, tell them that we will try to accommodate them as best as possible. First thing they have to do is notify their manager.”</i>
	<i>“Usually if the employee for some reason is not a 100% comfortable a supervisor or manager steps in with the conversation and as I said once the word allergy is used management is involved as well as the executive chef and the expeditor.”</i>
Establish clear and open communication	<i>“I mean I think the biggest thing that we do train them with is asking lot of questions and keeping the you know keeping the lines of communication very clear and open between the guests, the servers, the kitchen and you know everybody who is involved and making sure the food goes out you know how it needs to be.”</i>
Ask questions of chef	<i>“It’s a learning process and we don’t all have a full culinary background but they ask a lot of questions, you know, we have a good relationship with the back of house so they can easily go the chef and ask the chef any questions.”</i>
Listen to cue words	<i>“We train them on questions to ask, listening for cue words when people are talking.”</i>
Be willing to listen	<i>“I tell them that we need to be very willing to listen. When somebody gives us any directions about food allergies, we need to pay attention to what they are saying and take as much information on their notepad.”</i>
	<i>“Whatever the information so that when they communicate with me and when I talk to the guest and when we communicate with the kitchen don’t have any mishaps of communication. So we can deliver the food the way it’s supposed to be delivered.”</i>

(b) maintaining clear and open communication between customers and restaurant staff; (c) asking a lot of questions; (d) listening for cue words that may imply food allergies; and (e) being willing to listen.

Few training guidelines focusing on food allergy risk management for restaurateurs are available (25). Our findings were consistent with results of previous research, as very few restaurant managers had provided training focusing on proper communication between the front-of-house and back-of-house staff, or restaurant staff and customers with food allergies (22). For those managers who included topics related to communication (n = 3) in employee training, most taught their servers to pass allergen-free requests to managers rather than empowering their servers to make proactive decisions. This is concerning, because improper communication between and among restaurant staff and customers with food allergies is recognized as one of the major causes of food allergy reactions in restaurants (16, 20, 23). Merely handing over responsibility to the manager may not properly prepare employees to handle these situations.

In addition, most restaurants trained employees about food allergies on a “one-time basis” (e.g., initial orientation) or “every once in a while.” Frequent training may be needed, considering the increasing number of customers with food allergies, the variety of food allergens, and high employee turnover in the restaurant industry. Even though food allergy risks cannot be completely eliminated (18), reducing them may be attainable through training that focuses on risk management. Identifying the current status of food allergy risk perception and communication behaviors of restaurant staff may be an important first step in establishing training protocols.

Food allergy risk perceptions

Most participants (n = 10) were aware of the prevalence of food allergies in the U.S., and one participant indicated that “it seems like every day, more and more people are telling us that they have an allergy when they come in to the restaurant.” Some managers (n = 5) were confident of preventing food allergy reactions in their operations because of “the procedures that we have in place” and the fact that food is prepared in a “from-scratch kitchen.”

Participants presented different opinions about whether serving customers with food allergies was a significant concern in their operations. About half (n = 7) of participants viewed them as a significant concern, particularly because of the severity of allergic reactions. Participants recognized that it is their responsibility to serve food that is safe for customers with food allergies. One participant stated that it was the “establishment’s liability to ensure that the need is met,” and another stated that “It’s our responsibility to not only feed people but feed them a dish that is safe.” Even though it was difficult for participants to guarantee allergen-free service because

of potential cross-contacts, one participant stated that “[we] would do our best to accommodate their needs.” These findings were consistent with previous research findings on restaurateurs’ perceptions regarding risks of facilitating and accommodating customers with food allergies (1).

Participants also expressed their perceptions regarding specific food allergy risks in their restaurants (Table 4). Previous research has indicated that customers with food allergies perceived the potential for cross-contact in food preparation areas as one of the major causes of food allergy reactions in restaurants (20). Further, about 22% of reported peanut and/or tree nut allergen exposures in commercial foodservice operations were due to cross-contacts from shared cooking equipment or service supplies (16). A majority of participants (n = 9) indicated that potential cross-contact was a significant risk when preparing allergen-free orders. In the kitchen cross-contacts can happen easily, “from something as simple as a cook grilling a piece of fish on a grill and then going to cook a steak for a guest with a fish allergy on the same grill.”

Participants also identified human errors as one of the contributing factors in potential food allergy reactions. One manager stated, “there is always a risk because a simple mistake can turn into a serious problem” but “we are all humans, we all make mistakes, but it can be life threatening to a person and even severe neglect can cause legal action.” Human errors identified by our participants were improper washing of utensils (e.g., “a knife accidentally touches something and there is the assumption that it was washed properly”) and cross-contacts from allergenic food (e.g., “there is always a risk of some kind of food cross-contamination [cross-contact] that happens in the back that no one has ever seen before or wasn’t aware of.”

Risk communication scholars admit that zero risk is not realistic or attainable when managing food allergy risks in foodservice establishments (18, 24). Some participants (n = 4) recognized the fact that human errors could lead to serious accidents, and therefore, food allergy risk communication training in restaurants may be needed to minimize these possibilities while serving customers with food allergies.

Even though hidden ingredients constitute a relatively well-acknowledged food allergy risk, only one participant recognized them as a risk factor. If service staff is not aware of hidden ingredients, they may give a false sense of security to customers with food allergies. Nearly 50% of reported peanut and tree nut food allergy reactions in the U.S. were caused by hidden food allergens in sauces, dressings, and complex food items such as egg rolls (16).

Food allergy risk communication

Customers with food allergies perceived miscommunication as one of the major causes of food allergy reactions in

Table 4. Specific quotes regarding food allergy risk identification

Risk Perceptions	Selected Quotes
Hidden ingredients	<i>“There are some customers who are allergic to fish product and we have a dish that contain oyster, it’s either oyster or something fish in our ingredients which sometimes the servers don’t even know.”</i>
Potential cross-contact	<i>“So the possibility of a splash from one fryer to another fryer is possible and if you are severely allergic that possibility is there.”</i>
	<i>“When it comes to food allergy, you have to be a little more specific because you don’t want to use something that has been around let’s say nuts and then contaminate it with something else that’s not supposed to have nuts in it.”</i>
Communication	<i>“Because between the servers, you know, bringing in the food to the chef making the entrée, there definitely could be complications. A server could accidentally forget to notify the chef or the chef might not be aware of the allergies.”</i>
	<i>“There was an instance. And she did not tell us that she was allergic but she also didn’t order anything in her item that prompted her to ask for that. But someone next to her ordered the seafood and that did bother her because of how close it was. And there could have been a cross-contamination.”</i>

commercial restaurants (16). However, participants in this study addressed communication challenges only when they were prompted, which makes it uncertain if they consider communication as important. The communication procedures between and among restaurant staff is important, considering the number of staff involved in typical restaurant operations and the staff’s level of knowledge about food allergies. When asked, one manager acknowledged the importance of communication, stating *“the way to eliminate the problem is just communication”* and *“it’s definitely better to over-communicate if you [customers] have a food allergy than to risk running into a problem.”* If customers do not discuss their food allergies with restaurant staff, cross-contacts in kitchen and service areas are more likely to happen.

Previous research has indicated that a significant percentage of customers do not communicate their food allergies with restaurant service staff because they wish to avoid potential social embarrassment (23). Our participants expressed that they would appreciate it if customers with food allergies can *“actually let us know ahead of time if they have any allergies, before they place the order”* so that *“the chef and everybody else who is in charge of producing the food and make sure that whatever they are allergic to does not come in contact with the rest of the food.”* However, as discussed above, it was apparent that some managers solely depended

on notification from customers, rather than proactive communication from staff.

“We do rely a lot on the customers or the guests to take the responsibility and let us know ahead of time” one of our respondents said, because *“it’s their health obviously and we are liable just as well.”* Previous research found that the majority of customers with food allergies thought it was their personal responsibility to prevent food allergy reactions (40). However, there’s an inverse relationship between the level of control perceived by customers and the tendency to rely on the establishment’s risk management (40). For example, individuals with food allergies may feel a lack of control when dining out, and they may rely more on foodservice establishments to manage the risk and prevent food allergy reactions.

Furthermore, some participants (n = 5) emphasized that customers need to provide correct information to restaurants. The words customers used when communicating food allergies can lead to different attention levels from restaurant staff. For example, using the phrase *“I’m allergic to”* would bring more attention than *“I want to avoid”* or *“I don’t like.”* Considering *“a significant growth in (the number of) gluten free requests in the restaurant,”* restaurant managers raised the concern that *“a lot of the times guests request gluten free dishes and there is a very big*

difference between a gluten free diet and a gluten intolerance.” When customers have gluten intolerance, “the minimal trace of gluten can affect you,” but if customers are on a gluten free diet for any other reason, “a trace of gluten in your diet will not affect you.” Whenever customers “have stated that it is allergy we have to assume it’s an allergy.” Participants also stated that “a lot of times people come in and they don’t say anything.”

Information sharing

Restaurant managers used different ways to share food allergy-related information with customers who might have food allergies. Some restaurants (n = 3) had separate menus or allergen-free menus designed for customers who are allergic to major food allergens (e.g., peanut, shellfish). Other restaurant managers (n = 3) mentioned that they listed major ingredients on menus and would provide allergen-free items upon special request. One restaurant had a binder that included all ingredients of menu items, and staff would refer to it whenever a customer requested allergen-free dishes. An example from the industry is the computer system developed and used in one of the largest casual-dining Chinese restaurant chains in the U.S. that filters menu items automatically when servers enter allergens (31).

Communication procedures

Previous research found that customers were concerned about the consistency in communication because often

different restaurant staff place the order, prepare the food, and deliver it to the table (20). When asked about food allergy risk communication procedures (Fig. 1), all participants indicated that their servers would wait for customers to notify them about food allergies or ask for allergen-free items. After receiving the request, most participants (n = 9) mentioned that their server would notify the manager about a special requests. After that point, managers would talk to customers about their allergen-free orders and communicate customers’ needs with the chef. Four participants said their servers usually communicated orally with the chef, and only two participants mentioned that their servers usually wrote down customers’ food allergies on the ticket that would be sent to the kitchen. The other two participants explained that their servers would enter customers’ allergen-free requests into their point of sale (POS) system. Among the 16 participants, only five mentioned that managers or chefs would go to the customers’ tables to reassure them that their orders had been received and follow up to ensure consistent and correct communication between staff and customers.

Food allergy risk communication strategies

In addition to describing communication procedures, participants also discussed specific strategies they used when serving customers with food allergies. Some participants would inform customers of uncommon ingredients in food items (n = 2), ask questions (n = 1),

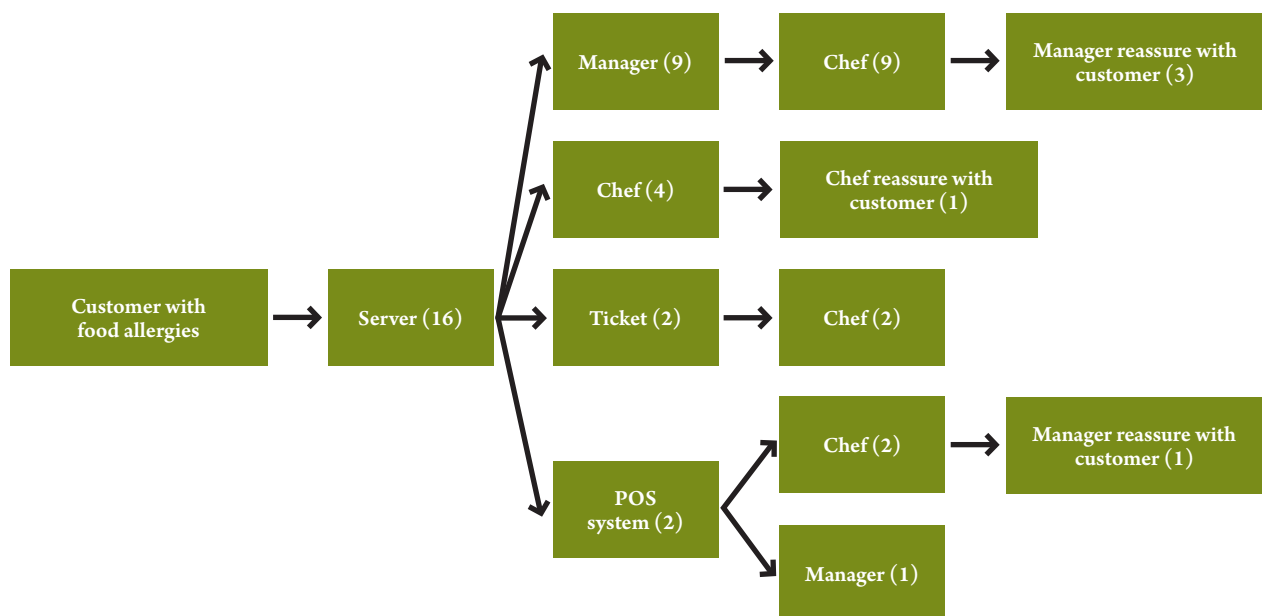


Figure 1. Communication procedures when serving customers with food allergies

explain the food preparation processes to customers (n = 3), or put a statement or disclaimer on the menu to encourage customers to notify restaurant servers about their food allergies (n = 4) (Table 5). It is noteworthy that only four out of 16 restaurant managers included a statement or disclaimer on their menus informing customers to notify servers if they have food allergies. In Massachusetts and Rhode Island, all foodservice establishments are required by law to include this statement (11, 29).

Food allergy risk management

Food allergy risk management plans. For risk management plans or protocols related to serving customers with food allergies, six participants indicated they had risk management plans or safety manuals in the restaurant detailing procedures in the event of food allergy reactions. All six were chain

restaurants (n = 3) or independent restaurants located in chain hotels (n = 3). Most stand-alone independent restaurants did not have any risk management plan in place. It is unclear if the rest of the chain restaurants did not have established risk management plans or if managers simply were not aware of or trained in risk management procedures. One participant mentioned that “we know where they are located but we don’t really go over them if something happens.” This finding further demonstrates that establishing procedures may not be enough to protect restaurant customers with food allergies. Training restaurant managers in following restaurant procedures while handling food allergy emergencies is an essential step.

Food allergy risk vs. food safety risk. Participants were asked to compare food allergy risk (e.g., potential cross contact in food preparation areas) and food safety risk

Table 5. Food allergy risk communication strategies

Strategies	Selected Quotes
Remind customers of specific ingredients	<i>“We have a lot of pork products that are under you know certain names that people mostly don’t necessarily know that it is pork so we let them know.”</i>
Read your customers	<i>“You know servers their whole job is to read people. That is all they do and sometimes you will see a server who goes up to a table and can read that there is something wrong and will ask the guest, ‘Is there something that I can do to help you? Is there something you need?’ and at that point a lot of times the guest will say, ‘Well, I have a foodborne allergy and I would really love if you can give me some ideas’.”</i>
Explain food preparation process	<i>“Making sure that you have a manager go over to them and explain the process and express how much that they matter to the restaurant so that they can feel assured that every measure is being taken to make sure that we are going to do our best to avoid any food allergies.”</i>
Suggest proper cooking equipment	<i>“Depending on the dish that they are requiring and the severity of the allergy we communicate with the guest and we give them the best possible option to provide for them. So for instance if the guest is highly allergic to some type of fat and they wanted something that was grilled we would -- we would recommend them having it cooked in a pan because we know that the pan has been washed and cleaned, whereas the grill may still have traces from previous cooking throughout the day.”</i>
Statement or disclaimer on menu	<i>“We have just kind of a disclaimer: If you have gluten allergies or what have you for any of our foods let us know and we can clean the cooking surfaces and prep our cooked foods that don’t come under contact with different oils or peanuts or what have you.”</i>
Allergy cards	<i>“What we’ve seen for the truly, you know highly severe reactions that the customers have that, they bring in a piece of paper that tells me what they’re highly allergic to. Which allows me to give it to the chef so they can avoid utilizing any of those ingredients in the food that they order.”</i>

(e.g., potential cross-contamination) in their operations. The purpose of this question was to elicit participants' perceptions toward the relative importance of food allergy risks. Some participants perceived food allergy risks as a greater concern because of the severity of food allergy reactions. Other participants indicated that food safety risks, such as cross-contamination, improper hand washing, employees not wearing gloves, or keeping foods at the wrong temperatures, were a greater concern, because they *"could affect everyone and anyone that walks into our restaurant,"* while food allergy risk *"affects (only) a portion or a percentage of the guests that come into the restaurant"* and *"there's even a day when not a single person walks in the door with a food allergy."* In addition, one participant was confident about procedures for preparing allergen-free orders and felt that food allergy risk was *"a little bit easier to handle and manage just because we do take all reactions and take it very seriously as well."*

CONCLUSION & IMPLICATIONS

Appropriately managing food allergies has become an issue for the restaurant industry because of the rising number of individuals with food allergies in the U.S. (1, 2, 19). Establishing proper communication between and among customers and foodservice employees may be one of the most important steps in preventing food allergy reactions in restaurants (23). Proper risk communication often initiates increased attention among restaurant staff to ensure customer safety. This study explored current practices in full-service restaurants through interviews with 16 restaurant managers in the U.S.

Even though a few participants had identified communication as one of the key elements in preventing food allergy reactions in restaurants, most participants did not provide training to their staff. For those managers who included food allergy-related topics in current training programs, most of them only trained staff to hand over food allergy requests to managers. Managers themselves were not trained about proper strategies for dealing with customers with food allergies. This may explain why they're not aware of the importance of risk communication related training. In addition, considering the fact that only a small proportion of customers have food allergies, our participants perceived that it was unnecessary to provide their staff with comprehensive training about food allergies.

Most participants in this study (n = 11) were well aware of the risk involved in serving customers with food allergies and were also very willing to accommodate customers' special dietary requests. However, some participants (n = 5) placed the responsibility of clearly communicating food allergies on their customers. To prevent liability-related issues, management staff in restaurants were reluctant to inquire about customers' dietary restrictions beyond putting a statement or disclaimer on the menu

to encourage customers to notify the server about food allergies. Examination of communication procedures when serving customers revealed that food allergy messages were usually delivered on a one-way basis in restaurants. Considering the number of people who may be involved in food preparation and service, it is critical that staff members know the correct process to reassure customers or confirm allergen-free orders when delivering the food. In addition, as suggested by some participants, implementing different ways of communication (e.g., written, oral) may improve the accuracy of information delivery.

Risk management, an important aspect of serving customers with food allergies, was not taken seriously by some restaurant managers. Most independent stand-alone restaurants did not have systematic risk management plans in place to handle food allergy reactions, but chain restaurants did. However, one of the chain restaurant managers stated that he wouldn't really go over the plan unless something happened. Given that food allergy reactions can happen very suddenly and may be life threatening, risk management training is critical for restaurant managers and staff.

The findings of this study provided both theoretical and practical implications for foodservice educators, food allergy advocates, policy makers, and the restaurant industry. For educators, because the ServSafe® courses covers only basic information about the major food allergens, other topics, such as food allergy risk communication and other causes of food allergy reactions, should be added to the current education curriculum. More specific food allergy prevention and management training is available through National Restaurant Association Education Foundation (i.e., ServSafe® Allergens), but it is unknown how many restaurant employees and managers complete this training. Currently, only a few states mandate it.

For food allergy advocates, it is important to encourage and educate individuals with food allergies to actively disclose their food allergies and clearly communicate their needs with the restaurant staff when dining out. In addition to verbal declarations, showing an allergy card that lists all ingredients they need to avoid may communicate their needs more clearly. For policy makers, in addition to developing legislation that requires food allergy training for restaurant staff, it is critical to encourage clear, two-way communication when developing training guidelines, posters, or legislation.

Restaurateurs should not always rely on customers to communicate their needs. Instead, they may need to proactively initiate the conversation by asking customers if they have food allergies and sharing potential risks (e.g., cross-contacts in food preparation areas) that exist in their operations. Even though customers with food allergies constitute only a small proportion of the customer base of most restaurants, the severity of food allergy reactions and

the increasing number of individuals with food allergies in the U.S. needs to be taken into account. Restaurateurs should be encouraged to implement food allergy training that includes training in proper risk communication.

Limitations and recommendations for future research

Even though a purposive sampling method has provided a variety of opinions and reflected practices of different types of restaurants in different geographical locations, the convenience sampling and the small number of participants limit the generalizability of this study. However, this qualitative research was not intended to gather generalizable data but rather to explore the perspectives of restaurant managers regarding risk communication when serving customers with food allergies.

In addition, this study examines only self-reported food allergy risk perceptions and risk communication-related

procedures and protocols. Such self-reported data may have been affected by the social desirability bias and must be interpreted with caution. Future research may use other methods, such as observations, to investigate food allergy risk perception and risk communication behaviors of restaurant managers.

Lastly, future research is encouraged to assess more generalizable food allergy communication and other practices in restaurants. Cross-sectional studies with a larger number of participants may better reflect current practices related to food allergy prevention and management.

ACKNOWLEDGMENT

This research was partially funded by the Kansas State University, Graduate School, Arts, Humanities and Social Sciences Small Grant Program.

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Call for Secretary Nominations



A representative from the government sector will be elected in March of 2017 to serve as IAFP Secretary for the year 2017–2018. Letters of nomination, along with a biographical sketch, are now being accepted by the Nominations Chairperson:

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The Secretary-Elect is determined by a majority of votes cast through a vote taken in March of 2017. Official Secretary duties begin at the conclusion of IAFP 2017. The elected Secretary serves as a Member of the Executive Board for a total of five years, succeeding to President, then serving as Past President.

For information regarding requirements of the position, contact David Tharp, Executive Director, at +1 800.369.6337 or +1 515.276.3344; E-mail: dtharp@foodprotection.org.

Nominations Close September 30, 2016