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The food safety culture in a large South African food service complex

Perspectives on a case study

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Abstract

Purpose – The purpose of this paper is to assess elements of food safety management and food safety culture within a prominent South African entertainment, hotel and food service complex.

Design/methodology/approach – In this paper a qualitative case study approach was used. Following a comprehensive literature review, based on factors known to be important in developing a food safety culture, in combination with national and international food safety standards, an interview guide was constructed and utilised in a series of semi-structured interviews. The interviewees represented different management levels involved in food delivery but did not include board level managers.

Findings – Many of the factors considered important in good food safety management, including the presence of a formal food safety policy and the creation and maintenance of a positive food safety culture, were absent. Although a formal system of internal hygiene auditing existed and food safety training was provided to food handlers they were not integrated into a comprehensive approach to food safety management. Food safety leadership, communication and support were considered deficient with little motivation for staff to practise good hygiene.

Originality/value – Food safety culture is increasingly recognised as a contributory factor in foodborne disease outbreaks and is the focus of increasing research. However, although every food business has a unique food safety culture there are relatively few published papers concerning its analysis, application and use within specific businesses. This case study has identified food safety culture shortcomings within a large food service facility suggesting there was a potentially significant food safety risk and indicates ways in which food safety could be improved and the risk reduced. The results also suggest further work is needed in the subject of food safety culture and its potential for reducing foodborne disease.

Keywords South Africa, Food hygiene training, Food safety culture, Food safety management, Management commitment

Paper type Research paper

Introduction

Food safety is of major international morbidity and mortality concern with unsafe food a growing global threat (WHO, 2015). It has been conservatively estimated that over 600 million people worldwide (one in ten) become ill annually from foodborne diseases resulting in 420,000
deaths with children at particular risk. A worldwide problem the highest rates occur in Africa with an estimated 91 million cases and 137,000 deaths (WHO, 2015).

Foodborne diseases can be acquired both inside and outside the home. Consumers have more control over home prepared food, although they may not always adopt good food hygiene practices (Redmond and Griffith, 2003), however, when they eat outside the home they may literally be putting their life in someone else's hands. Some consumers eating out

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have little choice in where to eat, e.g. hospitals, care homes, and these are often the most vulnerable whilst those eating in cafes, restaurants and hotels do have a choice. In addition to the millions of local South African consumers the magnitude of the problem is greatly increased due to many thousands of tourists who visit South Africa every year who also utilise the food service sector. This is of particular concern as foodborne diseases are largely preventable and food safety is a shared responsibility between governments, the food industry and the public (WHO, 2015). The responsibilities of governments include the need to pass and enforce appropriate food safety legislation. However, more frequently overlooked is the role that governments should play in research, surveillance and the collection of other relevant food safety data, e.g. on causative pathogens, implicated foods, risk factors and in consumer education (Griffith, 2005). Some countries have sophisticated reporting and surveillance systems leading to a greater understanding of the frequency, causes and costs of foodborne disease (Scallen *et al.*, 2011; Tam *et al.*, 2012). However, concerns have been expressed that South Africa does not have the capacity to track and manage foodborne disease (Malgas, 2016). In South Africa foodborne diseases tend to be poorly reported and this can limit risk reduction (Griffith, 2005) although some localised and unrelated cases do attract publicity (Powell, 2014; Dayimani, 2016; ENCA, 2016).

The food industry is a large and diverse global industry with foods and consumers moving relatively freely between continents. The extensive global trade in food has led to the development of internationally recognised food safety management standards such as those recognised under the auspices of the Global Food Safety Initiative (GFSI)[1] with food companies being audited to demonstrate their adherence to them (Griffith, 2017). Also of great importance, especially with the rise in global tourism and the possibility of infected tourists returning to their home country (HPA, 2010) the hospitality industry, frequently implicated in foodborne disease outbreaks (Griffith, 2000) has lagged behind food manufacturing in how it manages food safety(Griffith, 2000). In addition to causing local outbreaks the food service industry also has the ability to cause multinational outbreaks and one report has identified travellers' diarrhoea as a common tourism related health issue, with Africa classified as a high risk area (HPA, 2010). This places a responsibility on the hotel and food service industry to do their utmost to ensure that the food they serve is safe. Failure to do this can result in bad publicity, financial losses, prosecutions, fines and even imprisonment for those found to be negligent (Griffith, 2014; Flynn, 2015; USA TODAY, 2015; Boyle, 2015).

The study of food safety is not new although concerns have been expressed that historically it has been dominated by a microbiological approach and the limitations of this have been discussed (Griffith, 2006). Following recommendations for the greater application of a behavioural approach many studies have examined what food handlers know, feel and then do with respect to food safety (Bas *et al.*, 2006; Hertzman and Barrash, 2007; Clayton and Griffith, 2006). These studies initially focussed on individual food handlers, usually at the operative level and in isolation, the belief being these were the people who handled the food and were therefore the most important in implementing food safety practices.

Food safety management has been defined as the coordinated activities to direct and control food safety within a business and its systems as "all its documented procedures, practices, and operating procedures which influence food safety" (Griffith, 2014). Internationally in food manufacturing there has been a move to structure these on general pre-requisite programmes in conjunction with more specific hazard analysis critical control point (HACCP) plans based upon an international Codex Alimentarius set of principles (Codex Alimentarius, 1993). Current legislation in Europe requires food businesses to have a food safety management system (FSMS) based on Codex HACCP principles (Regulation (EC) No. 852/2004 (2004) on the hygiene of foodstuffs). However, food service is different from food manufacturing with additional hygiene problems,

not least of which is they present a less structured work environment serving food to order, rather than stock (Griffith, 2000). This has led to the development of FSMSs based on generic HACCP principles more suited to food service and other smaller and less developed businesses, e.g. safer food better business, safe catering and cooksafe (Wallace, 2014).

A failure on the part of food handlers to implement these documented food safety practices has often been interpreted as a lack of knowledge with a recommendation they receive for further hygiene training. More recently focussing on this approach has been questioned with food handlers found to be not implementing known food hygiene practices (Clayton and Griffith, 2008). This has led to a greater focus on the concept of the prevailing, collective food safety culture within a business (Clayton and Griffith, 2008; Yiannas, 2009; Griffith, 2014). The importance of food safety culture has been highlighted in a number of outbreak investigations (Griffith, 2014) and research into the topic is increasing (Griffith, 2010; Griffith *et al.*, 2010a, b; Ijabadeniyi, 2013; Abidin *et al.*, 2013, 2014; Jespersen *et al.*, 2016). Food safety culture has been described as an emerging risk factor (Griffith *et al.*, 2010a) and has been defined as "the aggregation of the prevailing relatively constant, learned, shared attitudes, values and beliefs contributing to the hygiene behaviours used within a particular food handling environment". This type of definition recognises certain key elements (Griffith, 2014) including that:

- every food business will have a food safety culture whether it is known or (as is more usual) unknown;
- a culture can be positive, i.e. favourably disposed towards implementing food safety practices or negative, i.e. a culture where food safety is seen as lacking in importance, possibly outweighed by the desire for short term financial returns with food safety practices not be implemented on a regular basis;
- the food safety culture does belong to one person but is shared within a group; and
- this culture is learned by new employees and that whatever an individual's own beliefs about food safety are, they may change their practices to fit in with those of their colleagues and the business.

The type of food safety culture existing within a business can explain why food handlers choose not to implement known food safety practices (Clayton and Griffith, 2008) and why training, although important, may not change practices. Whilst studies on food safety culture are still in their relative infancy attempts have been made to identify its underlying structure (Griffith *et al.*, 2010b; Griffith, 2014). One key component of a food safety culture is the management's commitment to food safety and this plus a greater understanding of a business's food safety culture are finding increasing importance in the latest revisions of GFSI accredited standards.

Management type is known to link to food safety attitudes and practices (Faour-Klingbeil *et al.*, 2015) and management failures including inadequate planning, poor organisation and control (Griffith, 2000) have been cited as causal factors in many foodborne disease outbreaks. Whilst there is increasing recognition that management food safety training is important (Brown *et al.*, 2014) traditionally this has been more likely to focus on the technical aspects of food management systems rather than on human behaviour. Managers need to know and be able to apply food safety principles/practices coupled with how to motivate employees to adhere to them. Given the importance of the hospitality industry, the increasing importance of food safety and food safety culture, which is unique for each business, the aims of the present case study were to investigate elements of the food safety culture within a large multi-faceted food service and entertainment complex and to identify areas for possible improvement.

Materials and methods

Background to the study site

The case study, a useful although often undervalued form of food research (Lyons, 2005) covered the food service facilities of the largest entertainment complex of a well-known South African hotel and casino group. This complex consisted of four hotels with extensive on-site conferencing facilities with a casino. The facility had seven kitchens under its direct control, which were the subject of this study. The kitchens varied in size from a small breakfast outlet with four kitchen staff to a banqueting kitchen with 30 kitchen staff during peak periods. The kitchens also varied in terms of production type, from full à la carte service to breakfast buffet only. The survey covered kitchens, under direct control of the study site management, which employed 168 staff members and fed on an average 140,000 patrons every month. Customers covered all risk categories including those who might be more susceptible to foodborne disease, e.g. very young/old, pregnant women as well as tourists from a broad range of countries. Several tenant restaurants with their own management who were located within the complex were excluded from the study.

The complex was part of a larger group of hotels and the management of the organisation functioned at two levels; a facility general manager who reported to the group operations manager and the facility executive sous chef (reporting to the facility general manager) who was responsible for all the kitchens as well as food safety.

The organisation had developed a formalised FSMS, incorporating HACCP, although this had not been implemented at the time of the study.

Semi-structured interviews

Semi-structured interviews (Saunders *et al.*, 2000) making use of an interview guide were used in the case study. This type of approach is considered superior to a traditional audit, which may only assess a business's food safety climate, the visible outer layer of food safety culture (Griffith, 2014). This approach also allows the interviewer to "probe" answers to questions when more in-depth information is required and has been advocated for assessing a business's food safety culture (Griffith, 2014). The interviews were conducted by a single highly experienced/qualified food safety lead auditor with a knowledge of food safety culture. The interview guide covered specific criteria (see Figure 1) used to assess and improve food safety culture including; food safety leadership, standards and documentation; food safety communication; food safety training, competence and supervision; food safety commitment and support; food safety assessment, monitoring and consequences. The responses were judged in relation to the requirements of a range of national legislation (SANS, 2001, 2007) and GFSI standards.

The study was conducted in a series of one-on-one interviews with open-ended questions based on the interview guide. These interviews allowed respondents to freely express their opinions, and information relating to non-verbal communication could be assessed (Harris *et al.*, 2009). Answers as far as possible were verified, e.g. by reference to any relevant documents, records or other visual evidence.

Food safety cultures can be strong or weak, in the former food safety beliefs are consistent across different levels in the whole organisation (Griffith, 2014). Therefore interviewees were selected from different management levels including the facility executive chef, responsible for food safety across the whole site and for the whole group. Other interviewees included the food safety auditor (dealing with food safety requirements on a daily basis and reporting to the facility executive chef), the back-of-house manager (responsible for, amongst others, cleaning activities in the kitchen) and the training officer. Additional comments were obtained from executive sous chefs and supervisors to enable verification and to provide additional management insights.

Respondents were contacted prior to the interview detailing the objectives of the interview. Handwritten notes were taken during the interviews with any references to

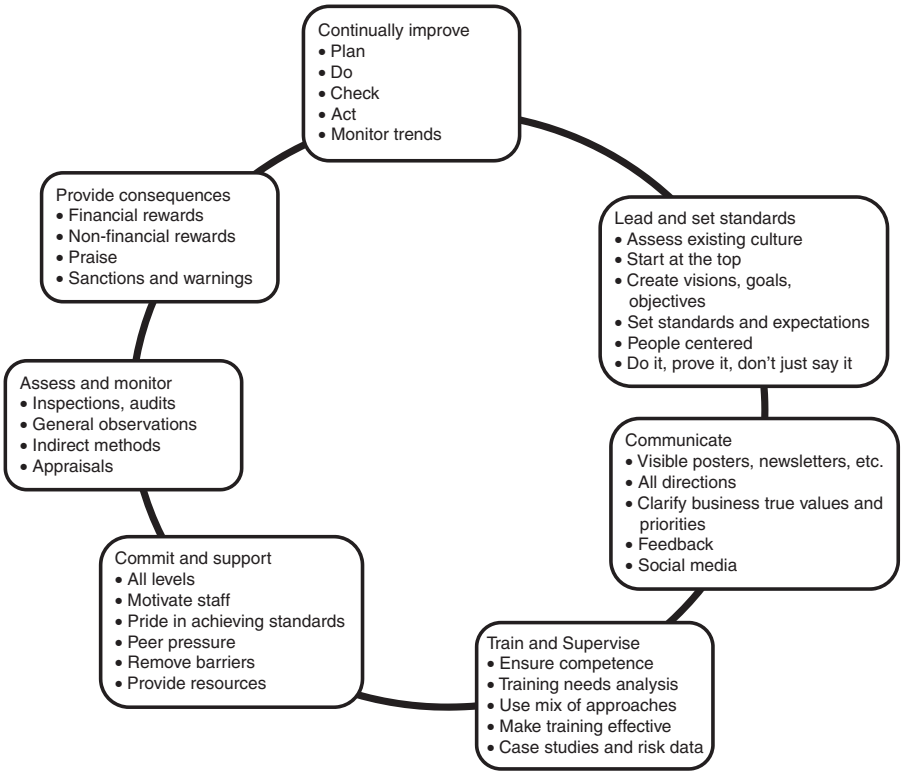

Figure 1.
Food safety culture development cycle

documented procedures, visually confirmed where possible. The duration of the interviews was determined by the volume of information provided by each respondent, was not time restricted, and varied between 30 and 90 minutes. After the initial interviews a further focus group discussion, which lasted 60 minutes, was held with the respondents to confirm the validity of the information (Saunders *et al.*, 2000).

Results and discussion

Food safety leadership, standards and documentation

The creation of a food safety culture is a senior management or owner's responsibility and this starts with the possession of a documented FSMS. Leaders need to use this to create a food safety vision and to set standards (Griffith, 2014).

Policies and documentation. Interviews revealed that the organisation had no formal food safety policy or vision detailing the management's commitment to produce safe food, to comply with legal requirements or to ensure the safety of guests. There was no formal corporate food safety policy and food safety management decisions were largely decided at an operations level and not part of a corporate strategy.

All employees received the employee handbook on commencing service. The contents included: employment policy, terms and conditions of employment, remuneration, leave conditions, benefits, training and development, code of conduct, rules and regulations. The employee handbook also referred to the corporate training policy, which was not available for review. No legal requirement exists in South Africa, as in many other parts of the world, for a food service business to implement a formal FSMS or HACCP system.

However, the establishment had developed a kitchen standard operating procedures manual (KSOM) as part of voluntary FSMS. This document outlined "kitchen rules" and was intended to assist with in-service training. Although all kitchen outlets on the site were registered with the local department of health, the legal basis for many of the procedures in the KSOM was not referenced.

Existing policies as defined in the KSOM were inconsistent and found to be contradictory with the food hygiene training programme (FHTP) and the employee handbook. Contents of the file focussed more on kitchen activities and preparation of food types, with limited food safety information. The latter was limited to checklists and personnel hygiene requirements. Reasons explaining the need for specific food safety activities, e.g. temperature control of food were not given. The document was not dated or approved by senior management and internal audits were not linked to compliance with the manual. Although the KSOM was available electronically to senior sous chefs only limited evidence of formal training on these procedures was available. Good food safety documentation should lay out unambiguously and clearly what is expected of staff and define and demonstrate management commitment, standards, support, with who has responsibility. Managers and owners, especially of smaller businesses, should take care not to give food handlers the impression that implementation of a food safety system is overly complex, merely adds to their workload or is unnecessary (Jevsnik *et al.*, 2008). The HACCP plan developed for the site, but not implemented was not inspected but was thought to be based more on a food manufacturing, rather than a food service type approach.

Food safety leadership. Much is heard about documentation and food safety management but less about food safety leadership (Yiannas, 2009). Those in senior leadership roles play a key part in setting the strategy, culture and tone for hygiene and cleanliness (Griffith, 2014) and how hygienically handlers behave is a response to this leadership.

Senior management lacked a clear set of food safety goals and were observed to not wear protective clothing in the kitchens, a practice which can encourage employees' non-conformance and lack of respect for food safety requirements. Positive behaviours by management can set an example and lead to positive staff behaviours. Unfortunately many managers perceive their own practices to be low risk (Mortlock *et al.*, 2000; Tracey and Tews, 2004).

In the current study, management's attitudes and leadership, assessed in terms of the development of a food safety vision and goals, formal FSMS, senior management commitment and hygiene behaviour were all found to not comply with industry standard good practice.

Delegation of responsibility and authority. The facility chef is responsible for food safety at the facility as well as at all the other facilities within the corporate structure. A full-time, dedicated food safety auditor had been appointed one year prior to the interviews. The incumbent expressed concern that, despite many efforts, there was still little progress towards successfully implementing HACCP at the site. Reasons for this included lack of co-operation at some outlets, lack of co-operation from executive sous chefs, lack of time by sous chefs and unwillingness to handle required documentation. The food safety auditor had no line authority and could not enforce food safety requirements directly. The incumbent had received basic food safety and HACCP training and attended internal auditing training. However, training on conflict and project management or developing and implementing management systems had not been considered. The incumbent's role in the current system involved being the eyes and ears of the facility chef in the kitchens. Responsibility for developing and driving the implementation of a FSMS was not clear, particularly relating to the involvement of the chefs at all levels. Although a direct reporting line to the facility executive sous chef assisted in resolving problems with compliance, this required involvement of the facility chef rather than resolving the issue immediately. Responsibility and authority for food safety should be clearly laid out and form part of a food safety communication strategy.

Food safety communication

Food safety goals and required practices need to be communicated down to food handlers. Whilst food safety documentation is important there is much more to food safety communication which needs to be both up and down (Griffith, 2014) with managers "listening" an important part of the communication process.

Weekly meetings were held with sous chefs responsible for completing any food safety records. Cleaning responsibilities had caused many discussions and chefs often argued that this was the responsibility of others (designated stewards). In some outlets sous chefs were reluctant to accept responsibility for stewarding as the direct reporting line for stewards is the back-of-house manager. This was confirmed during kitchen visits. Conflicting responsibilities and absence of formal management involvement in food and beverage provided possible communication barriers to successful implementation of appropriate safety systems.

The facility made extensive use of posters and an awards systems for front-of-house personnel but these did not extend to kitchen staff and the general manager had reportedly addressed the sous chefs on only one occasion. Communications on food safety issues in the facility were conducted informally with suppliers, through channels that were in place for banqueting clients. However, not all food safety issues were formally addressed. For example, although one outlet acknowledged allergens on the menu (increasingly important), there were no control systems in the kitchen. Extensive use was made of sub-contracted service providers and kitchen staff, but no formal communication systems existed to address food safety requirements with these third parties. Weekly sous chef meetings were designed to ensure communication with kitchen staff. However, respondents perceived these to be ineffective.

Executive sous chefs held weekly meetings with sous chefs to discuss operational issues, which often included food safety. Points of discussion included documentation not being completed, training not being done, audit scores and subsequent corrective actions. Although minutes of these meetings were required to be discussed with staff and displayed on the notice board, staff complained they were not adequately informed. Communications that were provided, appeared predominantly negative, focussing on issues not done or done incorrectly as opposed to things that were well done (see consequences).

Communication has been identified as being of utmost importance in promoting employees' understanding of food safety messages. Businesses with a positive food safety culture have a well-defined food safety communication strategy (Griffith, 2014) but none was evident in the complex. There was little opportunity for food safety concerns/feedback or communication "upwards" and the issue did not seem to be discussed by company management outside the study complex. Employee feedback concerning effectiveness of food safety communication was lacking but should be encouraged to ensure that the desired messages are received (Griffith, 2014).

Other than the channels mentioned no other formal or informal methods of food safety communication were detected.

Food safety training, competence and supervision

Food safety knowledge enables people to practise good hygiene when they are motivated to do so. This should include an understanding of food safety requirements, why they are necessary and the consequences of them not being hygienic.

Staff knowledge

Staff members interviewed were familiar with the requirements of Regulation R.918 published under Government Notice No. R.918 of 30 July 1999 of the Health Act, 1977 (Act no. 63 of 1977) and the mandatory certificates of acceptability were available in all kitchen outlets. All sous chefs had been issued with a copy of this regulation but little specific training had been provided on legal requirements.

Training policy

The organisation had its own in-house training facility and an in-house FHTP developed by the training manager. In addition, the complex executive sous chef had developed the KSOM, aiming to provide procedures for consistency in the kitchens. This manual was used by all hotels in the group. In-house training is still the preferred option for compliance with Regulation R.918, as well as the more recent R962 (2012) as it is considered more cost effective and employees are not removed from the workplace. However, no evidence was found of a formal food safety training policy at the study site.

Training in food hygiene commenced shortly before the interviews and was reported to be the first time such training had been conducted on the site and in the organisation. All food handlers were required to attend this training. Previously only stewards had been trained, e.g. the use of cleaning chemicals with training provided by the chemical supplier. Interviews showed the cost associated with training and the potential loss of trained staff as major concerns. This has also been reported in other studies (Kramer and Scott, 2004; Worsfold, 2005). According to the training officer, the FHTP had been well received by staff but improved practices were not observed during routine internal audits. At the time of the current study, no formal follow-up mechanisms were in place to support or assess training effectiveness.

Although the key performance areas (KPAs) for supervisors included encouragement of training and ensuring that training was in accordance with a training plan, little or no evidence could be found to verify if all employees had been trained. Job profiles for supervisors and senior chefs did not indicate pre-requisite training in food safety, no formal induction training was available, and there was no provision for refresher training which is considered important (Mortlock *et al.*, 2000; Worsfold and Griffith, 2009).

No evidence was available to suggest top management had received any food safety training yet businesses with trained managers and supervisors produce better microbiological quality food (Griffith, 2013). Lack of management training may restrict the ability of managers to assess risks and to assess training needs for other staff. While research on the need for food handler training has received considerable attention, the benefits for managers and supervisors to be trained is often overlooked (Brown *et al.*, 2014). In a UK survey Mortlock *et al.* (2000) found that less than 20 per cent of managers were trained appropriately in food safety. Similarly, Bolton *et al.* (2008) found that 20 per cent of head chefs had no formal training in food hygiene. There was no evidence of a formal food safety training needs analysis being undertaken in the study site.

However, improved knowledge from training may not in itself lead to improved food safety behaviour (Bolton *et al.*, 2008; Clayton and Griffith, 2008). Extensive suggestions to maximise the benefits of food safety training have been made (Griffith and Redmond, 2009) but these were not being implemented in the study site.

Supervision

Supervisors play a pivotal role in FSMSs by providing a link between senior management and food handling staff. However, supervisors in the food service sector are often poorly equipped to meet the responsibilities of management and leadership as a result of the industry being insular, producing craft rather than management skills (Guerrier and Deery, 2008). Although sous chefs from each outlet were required to supervise staff, in addition to their cooking responsibilities, no supervisory or motivational training had been provided.

Food safety commitment and support

Management commitment is essential to creating and maintaining a positive food safety culture and the success of any culture changes can be predicted by the personal commitment of senior management/owners (Griffith, 2014). Food safety leaders/managers

must be proactive in food safety to protect their brand and management commitment is a key requirement of GFSI and other approved standards. This commitment will be consciously or sub-consciously communicated to supervisors and food handlers in, how much time, interest and money is invested in food safety.

The interviewees highlighted lack of time as a serious barrier to effective implementation of food safety documentation and practices. This is often the case in catering establishments and employees prioritise tasks according to their own perception of importance (Panisello and Quantick, 2001; Bas *et al.*, 2007). The key to success of an integral quality programme and to motivation of each employee is the manager (Brown *et al.*, 2014; Faour-Klingbeil *et al.*, 2015). It is the responsibility of managers to ensure that all employees are able to perform necessary food safety practices. Strong leadership regarding priority of food safety and responsibility of corporate management to provide sufficient resources are the cornerstones in providing the time needed for implementation of an effective food safety system. Other than the recent introduction of food safety training there appeared to be little organisational management commitment to food safety.

A separate food hygiene inspection of the food preparation areas of the complex indicated considerable variability in the provision of hygiene resources with some kitchens being old and others new, some were too small for purpose and poorly laid out and designed, e.g. more than 50 per cent of the hand wash stations were not dedicated to handwashing. This would both act as a barrier to effective hand hygiene and also convey a lack of management commitment. Overall considerable further investment in food safety facilities was required to encourage good hygiene practices and demonstrate food safety commitment.

Food safety assessment, monitoring and consequences

The assessment of a business's food safety culture is important in both setting up and maintaining a positive hygiene culture. This requires routine analysis and assessment of the food handling practices and this can be undertaken in a variety of ways, the results should then be linked to consequences (Figure 1). Good evidence exists to show that people's behaviour is influenced by the perceived consequences of their actions (Yiannas, 2009). Mechanisms for assessing food safety and food safety culture can be formal or informal and internal or external. The results of these assessments, e.g. hygiene audit scores should, however, not be seen as an end in themselves but as a vehicle for further improvements. Good hygiene behaviour must be recognised and rewarded with procedures in place to deal with, and improve, poor food hygiene behaviour (Griffith, 2014). Useful as audits are, perhaps historically too much emphasis has been placed by food companies on short term audit results with some companies receiving good audit/inspection scores causing food poisoning soon afterwards (Griffith, 2014).

Internal assessments of food safety culture

Direct management assessment of food safety was limited. Although ad hoc walkabouts were carried out by corporate management these were concerned with back-of-house activities and were not focussed on food safety. They were pre-scheduled with kitchens cleaned beforehand and did not represent real life/day-to-day standards.

Formal monthly internal food safety audits were carried out by the food safety auditor and addressed aspects such as personal hygiene, protective clothing, condition of the facility and local environment, pest control, equipment, facility layout and production control, receiving, stock rotation and food storage, cleaning and sanitation and process control such as cooking temperatures. In addition to reports, photos were taken of non-conformances. This type of audit is useful, although may assess food safety climate rather than culture (Griffith, 2014) but become more difficult for auditors and food handlers to interpret and use in the absence of documented food safety system to audit against. Audit results were communicated to senior

management and considered in performance appraisal systems. However, there was no evidence of recorded corrective action taken as a result of audit findings.

A daily hygiene checklist was in place in all kitchen outlets and supervision of personnel hygiene requirements had been delegated to the sous chef. However, these checklists were not always completed and their requirements not consistently enforced. Food safety documentation is often perceived as complicated and unnecessary, while record keeping is not considered part of the job or system and its importance not realised. Such problems arise when people do not understand the importance of records and their role in its completion. As a result, documents/records are often completed only for inspection purposes and not as an integral part of the food safety system (Eves and Dervisi, 2005; Griffith, 2017). No formal mechanisms were in place to review food safety related job performance.

External assessments of food safety culture

External audit reports were issued to senior site management and included minor issues, such as microbiological contamination on washed crockery but were not linked to any formal standards or daily monitoring of food safety activity. Data recorded, e.g. fridge temperatures, were not used for trend or performance analysis, as the basis for improvements or to motivate employees.

Senior management is often inclined to react more readily to an external auditor's findings than to those of an internal auditor. Previous studies reported on over-reliance on inspection results, resulting in owners and managers focussing on fixing specific violations rather than on risk assessment and evaluating the overall food safety performance (Hedberg *et al.*, 2006). Criteria for external audits are often designed around infrastructure requirements such as suitable floors, lighting and other maintenance requirements. Kitchens may, therefore, be penalised for actions over which they have no control, as the organisational management did not have overall responsibility for site maintenance. As a result, staff can become demotivated when required to implement control systems in a facility which is congested, unhygienically designed and causes a technical barrier to implementation of HACCP (Panisello and Quantick, 2001).

Due to the high profile of the organisation under investigation, regular inspections were performed by local authorities. However, due to the complexity of the site layout it was difficult to inspect and the results provided little motivation for developing formal FSMSs and records.

Another measure of food safety is linked to the type and number of external complaints. With reference to an alleged outbreak of foodborne illness, negligible formal training had been provided on dealing with an outbreak or with guest food safety complaints. The only formal procedure in place appeared to be an employee handbook which instructed employees on taking responsibility for guest complaints. During the survey, a guest complaint reported a dish as "tasting off", but there was no real evidence of samples being sent for testing, the rest of the batch of ingredients being discarded as precautionary measure or records kept of the complaint. A general response from interviewees regarding guest complaints was that "you cannot satisfy everyone all of the time" and that complaints were not taken seriously. Several incidents of alleged foodborne illness had been reported in the previous five years, but involved only one guest per complaint.

Positive and negative behavioural consequences

The study site employed substantial resources to communicate with front-of-house personnel as well as incentive schemes for guest satisfaction. However, there was no equivalent for back-of-house staff and no formal incentives for food safety. A performance appraisal system had been implemented approximately one month before the interviews. Criteria for this assessment were in accordance with the corporate performance assessment

form guidelines which did not mention food safety and consisted of: quantity, quality, and knowledge of work, reliability, attendance, punctuality, initiative, human relationships, leadership potential, planning and organising and self-development. Job profiles were in place and stipulated KPAs for each chef in the kitchen. However, limited specific measurable activities for food safety had been defined and no specific guidance had been provided on interpretation of the requirements for kitchen staff. Discussions with the food safety auditor and facility chef revealed employee motivation as a significant challenge, specifically motivating sous chefs responsible for the various kitchen outlets.

Problems associated with employees in the catering industry are reported to range from high staff turnover, low pay, and large numbers of part-time workers, to language problems, low social status and also low education levels (Griffith, 2000; Panisello and Quantick, 2001; Eves and Dervisi, 2005; Bas *et al.*, 2006). In a study on food hygiene and safety training, Worsfold and Griffith (2003) found 30 per cent managers admitting failing to provide feedback on performance and only 50 per cent said they would reward or praise good hygienic performance. Such practices could easily affect employee motivation. Performance feedback and administrative support in a practice such as hand washing, showed that compliance increased significantly (Rosenthal *et al.*, 2003). The current study highlighted that feedback information was generally negative and no formal reward systems were in place.

The interviews revealed that food safety misdemeanours were dealt with inconsistently, sometimes by issuing written warnings for non-compliance or even dismissals. In spite of this the priority was to cook, with little apparent concern for food safety. Hiring of untrained casual staff was common and this can lead to additional food safety problems and risks (Jones *et al.*, 2008).

Overall discussion and conclusions

Notified or known cases of foodborne disease represent the tip of the iceberg (Griffith, 2010; Tam *et al.*, 2011) and the consequences of failing to provide safe food are becoming more severe for victims, businesses and even countries. Success in food safety must not just be to conform to requirements but to achieve a successful business with satisfied safe customers. Producing safe food consistently, especially in large quantities shortly before consumption requires the use of known food safety practices which in turn is dependent upon an integration of a well-constructed management system in conjunction with an appropriate food safety culture. The latter has been variously described as "the glue that holds everything together" (Griffith, 2014) an "insurance against catastrophe" (Ades *et al.*, 2014) and with reports that improving food safety culture can reduce food safety issues by as much as 60 per cent[2].

Food safety culture is composed of a number of different sub components working synergistically fitting together like a jigsaw. The food safety culture at the complex studied, whilst having some positive elements, resembled an unassembled collection of pieces with some missing. The pieces that were present were not working together in an integrated or joined up way. Numerical mechanisms have been proposed for the assessment of food safety culture (Griffith, 2014) and if this approach had been used at the complex they would not have scored well, with major deficiencies identified in food safety leadership, standards and commitment, FSMSs, food safety communication, and inconsistencies in food handler hygiene behaviour. The business, whilst having some good ideas, was poor at their implementation. Examples included the development but non-implementation of a HACCP based management system with scepticisms about its future use. This was coupled with limited formal evidence of food safety leadership or management commitment to food safety other than the recent introduction of in-house food handler training.

Management behaviour such as understanding, commitment and leadership has for many years been found to be the single most critical success factor in the implementation of

a total quality management process (Porter and Parker, 1993). Top management is responsible for at least 94 per cent of difficulties within organisations because they control the assignment of resources, establish and implement methods of work, and influence the culture of the working environment. Improvement of a system is, therefore, the responsibility of top management (Herrero *et al.*, 2002). Top management needs to be aware of their leadership role and responsibilities in the formation of an organisational culture and equip their managers with the necessary skills to create and uphold a positive food safety culture at all levels (Griffith *et al.*, 2014).

Safety management is regarded as the documented and formalised system of control against risk or harm. However, the standard of an organisation's documented safety management system does not necessarily reflect the way it is carried out in practice. It is the safety culture of the organisation that will influence the deployment and effectiveness of safety management resources, policies, practices and procedures, and represents the work environment and underlying perceptions, attitudes and habitual practices of employees at all levels (Kennedy and Kirwan, 1998).

To reduce their food safety risk the complex should initiate senior management food safety training as a prelude to engaging in a programme of continuous culture improvement as outlined in Figure 1.

Notes

1. www.mygfsi.com/n
2. www.alchemysystems.com/wp-content/uploads/2015/01/maple-leaf-case-study.pdf

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