

EXPLORING KITCHEN ACCIDENTS AND SAFETY STRATEGIES IN SRI LANKA'S 3-STAR HOTELS

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Abstract: Kitchen accidents pose a critical risk within the hotel industry, especially in high-star-rated establishments. Strategic health and safety management is crucial to improving hotel employees' health and safety. This study uniquely focused on identifying common kitchen accidents and their causes through literature and barriers to enhancing kitchen safety among staff and strategic approaches to minimise risks in Sri Lanka's 3-star hotels through 10 semi-structured interviews with managerial-level personnel. This study area is underexplored in previous literature. Findings revealed persistent kitchen safety issues among kitchen staff, encompassing various Occupational Health and Safety (OHS) concerns such as slips, falls, cuts, burns, eye injuries, and musculoskeletal discomfort. The causes of these OHS issues were classified into four categories: work environment-related, people-related, material and equipment-related, and management procedures and methods-related. Barriers to enhancing kitchen safety in the Sri Lankan context were identified under four main categories: economic, legal, social, and technical. This study contributes to the field by proposing targeted strategies to enhance kitchen safety in Sri Lanka's 3-star hotels, addressing these identified causes. Key strategic measures include training and awareness, technology adoption, adequate supervision, managerial controls, standards, and regular auditing/reviewing. By focusing on a specific and underrepresented segment of the hotel industry, this research provides valuable insights and practical recommendations to improve kitchen safety.

Keywords: *Kitchen Accidents, Hotels, Occupational Health and Safety, Sri Lanka*

1. Introduction

A hotel can be defined as an open-to-the-public accommodation option for visitors that offers room service, food and beverage services, and a place to stay with payment terms (Gosjen et al., 2023). In many economies around the world, the tourism and hospitality industries are very significant. They contribute to represent a substantial percentage of the GDP of most nations and are regarded as the core of many economies (Alreahi et al., 2023). Vagena and Papakonstantinidis (2020) highlighted the global certification processes undertaken by numerous hotels to validate service quality. These certifications adhere to established quality assurance standards, which are aligned with specific star categories such as 3, 4, or 5 stars (Okhai, 2023). The nature of kitchen tasks varies following the specific star categories of the hotel (Akbar & Rijal, 2024). Vagena and Papakonstantinidis (2020) have mentioned that high-tech advancements in upscale hotels reduce accident probabilities. However, as per the Sri Lanka Tourism Development Authority (SLTDA, 2021) data, there are 26 establishments with a 3-star rating, constituting 16.49% of the occupational rate. Notably, this figure surpasses the number of establishments and occupational rates observed for 5-star hotels in the year 2020.

Akbar and Rijal (2024) emphasised the kitchen as a critical risk zone, detailing dangers like sharp implements and burn potential. Researchers have identified several factors that contribute to kitchen accidents, and Gitnux (2023) has stated that human error resulting from inappropriate actions performed in unsafe environments, which include extended hours and fluctuating workloads, can cause accidents. Abdelsalam et al. (2023) underscore the risks faced by cooks, including burn injuries and slips from moisture on the kitchen floor. In the context of the hotel industry in Sri Lanka, an assessment has identified several paramount health and safety hazards, including cuts, burns, electrical hazards, heat-related risks, instances of slipping and tripping, accidents arising from the operation of machinery and tools, exposure to chemical hazards, falls from elevated surfaces, occurrences of fire and explosions, and concerns related to ergonomics (Rajini et al., 2012).

Tortorella et al. (2020) stated that numerous studies have been dedicated to implementing tools and methodologies aimed at crafting strategies for mitigating and diminishing the risk factors associated with occupational accidents and diseases. These programmes have produced a significant impact on improving occupational health and safety management systems across the world. In a study conducted by Logeshwaran et al. (2022), the potential for preventing kitchen fire accidents through the utilisation of the Internet of Things (IoT) was discussed. Competencies among workers are improved by staff training, which further increases their competitiveness. Effective training minimises accidents and enhances professional and personal qualities (Freitas & Stedefeldt, 2022). Thus, priority for the well-being of the kitchen staff effectively mitigates the occurrence of accidents, injuries, and ailments. Moreover, this prioritisation guarantees the consistent maintenance of food quality and sustains customer satisfaction (Hart & Hodgson, 2014). It is crucial to maintain a clean and secure environment to prevent workplace accidents through slips, trips, and falls (Apreko et al., 2015).

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In Sri Lanka, the underreporting rate of kitchen accidents is high. However, a limited number of kitchen accidents have been publicly reported. For instance, a chef was injured in a gas-related explosion at a 4-star hotel in Colombo (DailyMirror, 2022), and a septuagenarian man died after his clothes caught fire inside the kitchen of a small restaurant in Lindula (Adaderana, 2022). Businesses must ensure that the required health and safety measures are in operation to lower the risk of injuries in the kitchen (Ercan & Kiziltan, 2014). According to the Department of Labour (2021), there were 171 cases of non-fatal workplace accidents in the food and beverage industry. In Sri Lanka, there is no national body that supervises and oversees the practice of kitchen accident controls in the hotel industry. Therefore, there is a need for kitchen accident mitigation programs in the Sri Lankan hotel industry. While researchers such as Hao et al. (2020), Yared et al. (2015), Ercan and Kiziltan (2014), and Green et al. (2013) have conducted studies on kitchen safety, there is a lack of research specifically addressing the safety of kitchen staff in the Sri Lankan hotel industry. Given this gap and the pressing need for improved safety measures, this study aims to identify common kitchen accidents and their causes through a literature review and to explore barriers to enhancing kitchen safety among staff and strategic approaches to minimise risks in Sri Lanka's 3-star hotels through semi-structured interviews. By addressing an underrepresented segment of the hotel industry, this research contributes valuable insights and practical recommendations for improving kitchen safety, thereby enhancing the overall well-being of hotel employees.

2. Literature Review

According to the stipulated objectives of the present study, common kitchen accidents and the leading causes behind these accidents were identified through a comprehensive examination of literature studies. This section reports the corresponding literature findings.

2.1. TYPES OF KITCHEN ACCIDENTS

This section presents the research findings on the various types of kitchen accidents faced in various star hotels. It mainly focuses on identifying the injuries and illnesses faced by kitchen staff. As per the researchers' findings, this section presents a table categorising different types of kitchen accidents/injuries that have occurred within the hotel industry from 2011 to 2022. Table 1 specifically outlines accidents that took place in the kitchen during this period.

Table 1 - Types of Kitchen Accidents and Injuries

Types of Accident	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Burn	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fall/ Slip	X	X		X	X	X	X	X	X		X		X	X	X	X	X	X	X
Finger Cut and Laceration	X	X	X	X		X	X	X	X				X	X	X	X	X	X	X
Eye injury			X				X			X						X			
Heat exhaustion		X			X						X				X	X	X		
Chemical exposure		X				X		X		X							X		
Electrical shocks				X				X					X			X			
Musculoskeletal injuries	X			X		X			X	X		X				X	X	X	X
Repetitive strain injuries	X			X			X			X		X			X	X	X	X	
Stress-related disorders	X		X			X			X				X	X	X		X	X	

A: (Kokane & Tiwari, 2011), B: (Sahingoz & Sahin, 2012), C: (Ambardar, 2013), D: (Kee et al., 2013), E: (Nelson & Nesmith, 2014), F: (Hart & Hodgson, 2014), G: (Allan et al., 2014), H: (HSE, 2015), I: (Bindu & Reddy, 2016), J: (Cherono, 2017), K: (Chauhan & Shukla, 2018), L: (Hsu et al., 2019), M: (Won, 2020), N: (Odhiambo, 2021), O: (Shemtob, 2022), P: (Bureau of Labor Statistics, 2024), Q: (Kuo et al., 2020), R: (Zacharia et al., 2022), S: (Park et al., 2017)

As Shown in Table 1, most previous studies argued that 'burn' is the most frequent type of injury among kitchen workers. Park et al. (2017) found that, on average, 62.7% of respondents reported a burn-type accident as the most common type. In kitchen conditions, contact with hot surfaces, liquids, or flames frequently results in burn accidents (Shemtob, 2022). Kitchens are full of hot surfaces of all kinds, from oven doors to fryolators and stovetops to kitchen tools (Hart & Hodgson, 2014; HSE, 2015; Hsu et al., 2019; Nelson & Nesmith, 2014). As a result, the risk of burns is increased. Among the accidents burns are among the most frequent kitchen accidents and can result in varying degrees of injury, from minor burns to severe burns requiring medical attention (Kokane & Tiwari, 2011; Shemtob, 2022). Kitchen workers are especially vulnerable to slip-and-fall accidents because they are frequently exposed to moisture on kitchen floors (HSE, 2015). Slipping occurrences were identified by Park et al. (2017) in 49.4% of the respondents, according to their study. Park et al. (2017) found that cut injuries have happened to 48.2%, based on reports from respondents. The use of equipment with sharp blades for grinding or slicing poses another risk, and the utilisation of gas for heating increases the potential for explosions (Haruyama et al., 2014). According to the authors, eye injuries in kitchens happen due to hot oil splashes, chemical exposure (Ambardar, 2013), flying debris, and improper tool use (Cherono, 2017). Other than the above accidents, researchers mentioned that kitchen workers could experience heat exhaustion from prolonged exposure to hot environments (HSE, 2015), chemical exposure through mishandling cleaning agents (Cherono, 2017; Kuo et al., 2020b; Sahingoz & Sahin, 2012), and workers in kitchens involved in frequent heavy lifting may experience musculoskeletal issues (Hsu et al., 2019; Kuo et al., 2020;

Zacharia et al., 2022). 15.7% of the respondents experienced musculoskeletal disorders in a study by Park et al. (2017). Shoulder pain, body pain, and stress-related disorders can happen due to the high workload in the kitchen (Barlas & Izci, 2018).

The potential risks faced by kitchen staff were discussed in this section, with burns, cuts, and falls being the most common injuries. This highlighted the significance of establishing suitable safety measures and training programs to reduce accidents at work and improve hotel kitchen safety standards. The leading causes of kitchen accidents are discussed in the next section.

2.2 CAUSES LEADING TO KITCHEN ACCIDENTS

Rajini et al. (2012) suggested four categories to describe the causes of accidents: work environment-related, people-related, material-related, and methods-related causes. Considering this categorisation and following a comprehensive exploration of literature, this study adopted work environment-related, people-related, material and equipment-related, and management procedures and methods-related causes to identify and classify the causes of kitchen accidents. This systematic identification of causes helps in effectively identifying mitigation strategies for kitchen accidents.

2.2.1 Work Environment-Related Causes

In the context of kitchen safety, work environment-related factors encompass various aspects of the physical space and conditions in which kitchen activities occur (Abune et al., 2020). Barlas and Izci (2018) mentioned that understanding how these work environment-related factors influence the occurrence of accidents is essential for implementing effective preventive measures and creating a safer working environment for kitchen staff. Hence, Table 2 summarises the literature findings on causes in the work environment that influence kitchen accidents.

Table 2 - Work Environment Related Causes

Causes	References								
	A	B	C	D	E	F	G	H	I
Inadequate lighting	X								
Poor design of machines, work environment, and processes	X	X		X	X	X	X	X	X
Improper working platform and	X			X	X	X	X	X	X
Lack of Safety Equipment			X	X	X				
Slippery Floors	X	X							
Poor Ventilation			X						
A: (Erkal, 2011), B: (Hsu et al., 2019), C: (Senol & Ferhatoglu, 2019), D: (Revilla & Carrillo, 2014), E: (Kokane & Tiwari, 2011), F: Sedani et al. (2019), G: (Chen et al., 2012), H: (Xie et al., 2020c), I: (Min & Hong, 2021)									

As shown in Table 2, previous studies argued that poor design of machines, work environment, and processes impact kitchen accidents. According to Senol and Ferhatoglu (2019), unsafe placement of tools like pots and pans with handles that reach beyond the oven in low, unlocked cupboards; hot water, hot materials, or boiling oil in easily accessible areas; and malfunctioning or insecure on-off buttons on kitchen appliances, like ovens are examples of poorly designed machinery, work environments, and processes. Most importantly, these causes should be addressed to create a safe work environment in the kitchen.

2.2.2 People-Related Causes

According to Neepa et al. (2021), approximately 98% of accidents are caused by unsafe human behaviour, either directly or indirectly. Human-related causes of kitchen accidents pertain to factors associated with the behaviour, actions, and decisions of individuals working in the kitchen environment (Nelson & Nesmith, 2014). Understanding how human behaviour affects accidents is essential to establishing preventive measures that promote an environment that prioritises safety in kitchen environments (Neepa et al., 2021). Hence, Table 3 summarises the literature findings on people-related causes that influence kitchen accidents.

Table 3- People-Related Causes

Causes	References								
	A	B	C	D	E	F	G	H	I
Lack of experience/training	X	X	X	X	X			X	X
Lack of communication		X			X	X	X	X	X
Lack of monitoring and supervision	X	X						X	X
Inattention			X	X		X	X	X	
Not using PPE/ Neglecting safety		X	X	X	X			X	X
Excessive overtime working		X	X	X	X		X		X
Low job satisfaction				X					
Great time pressure to perform their		X	X		X	X	X		
The lack of attitudes and skills	X		X					X	

A: (Nelson & Nesmith, 2014), B: (Abdelsalam et al., 2023), C: (Senol & Ferhatoglu, 2019), D: (Revilla & Carrillo, 2014), E: (Kokane & Tiwari, 2011), F: Sedani et al. (2019) G : (Krause et al., 2005), H: (Chen et al., 2012), I: (Min & Hong, 2021)

As indicated in Table 3, the majority of authors have highlighted the impact of lack of experience among kitchen workers on kitchen accidents. Additionally, not using personal protective equipment (PPE) and working overtime have been commonly cited as contributing factors. Lack of communication, inadequate monitoring and supervision, inattention, low job satisfaction, great time pressure to perform duties, and the lack of necessary attitudes and skills have also been identified as influencing kitchen accidents.

2.2.3 Material and Equipment-Related Causes

According to recent authors, only a few have mentioned material and equipment-related causes of kitchen accidents. Table 4 summarises the literature findings on material and equipment-related factors influencing kitchen accidents.

Table 4- Material and Equipment-Related Causes

Causes	References			
	A	B	C	D
The lack of adequate equipment	X	X	X	X
Lack of professional safety equipment		X		
Unsafe placement of tools		X		
Difficulties in using hotel equipment		X		
Poor resource allocation			X	
Usage of low-quality Material				X
A: (Baser et al., 2016), B: (Xie et al., 2020b), C: (Akkus et al., 2022) D: (Nayl et al., n.d.)				

According to Table 4, a prominent material and equipment-related cause of kitchen accidents is the lack of adequate equipment. Furthermore, factors such as the absence of professional safety equipment, the need for equipment replacement, challenges associated with the usage of hotel equipment (Xie et al., 2020b), and poor resource allocation have also been identified as contributing to kitchen accidents (Akkus et al., 2022). These material and equipment-related issues underscore the importance of ensuring that kitchens are equipped with the necessary tools and resources to promote a safe working environment.

2.2.4 Management Procedures and Methods-Related Causes

These causes refer to factors associated with the procedures, practices, and methods employed in kitchen operations. Table 5 summarises the literature findings on management procedures and methods-related factors influencing kitchen accidents.

Table 5 -Management Procedures and Methods-Related Causes

Causes	References			
	A	B	C	D
Lack of safety procedures	X	X	X	X
Lack of safety manuals	X	X		
Inadequate accident management		X		
Lack of new technology		X		X
Underreporting workplace			X	
A: (Xie et al., 2020b), B: (Kuo et al., 2020), C: (Fanca et al., 2016), D: (Logeshwaran et al., 2022)				

According to Table 5, a frequent management procedures and methods-related cause of kitchen accidents is the lack of safety procedures (Xie et al., 2020, Kuo et al., 2020b). Furthermore, factors such as the absence of safety manuals (Xie et al., 2020), inadequate accident management (Kuo et al., 2020), lack of new technology (Logeshwaran et al., 2022), and underreporting of workplace accidents (Fanca et al., 2016) have also been identified as contributing to kitchen accidents.

Won (2020) says that identifying the root causes is crucial to implementing preventative measures for workplace accidents and injuries. Therefore, this section has discussed the main reasons for kitchen accidents based on four categories: work environment-related, people-related, material and equipment-related, and management procedures and methods-related factors. Responsible parties can achieve a safer working environment in kitchens by considering these categories when developing specific solutions and safety measures. Accordingly, the literature section of the present study has contributed to identifying different types of kitchen accidents and the causes of kitchen accidents. The next section presents the employed research methods to achieve the aim of the present study.

3. Research Methods

A comprehensive literature review was conducted using peer-reviewed articles, conference papers, books, and relevant websites and databases to establish a foundation for the research. The review focused on keywords related to kitchen accidents in hotels and safety issues in hotel kitchens. Only the studies related to the hospitality industry, reported in or after 2005, were selected. Subsequently, semi-structured interviews were conducted to investigate barriers to enhancing kitchen safety among staff and strategic approaches to minimise kitchen-related safety risks in Sri Lanka's 3-star hotels. A purposive sampling method was used to select and interview ten experienced professionals, each with at least nine years of expertise in kitchen safety and occupational health. This enabled the researchers to examine kitchen safety aspects from multiple perspectives to gain a better pragmatic understanding. The gathered qualitative data underwent content analysis using NVivo 12 Plus software to detect themes and patterns associated with kitchen safety, and the data underwent coding and categorisation to discover crucial themes and insights. The expertise of the interviewed professionals helped to obtain more validated data. Table 6 contains a summary of the respondent details.

Table 6- Managerial Level Workers' Profile

No	Category	Interviewee Code	Designation	Years of
01	Executive level	R1	Head chef	20
02		R2	Head chef	18
03		R3	Head chef	18
04		R4	Head chef	16
05		R5	Head chef	17
06		R6	Sous Chef	15
07		R7	Sous Chef	14
08		R8	Sous Chef	15
09		R9	Sous Chef	12
10		R10	Sous Chef	9

4. Analyses and Findings

4.1. BARRIERS TO ENHANCING KITCHEN SAFETY

All respondents at the management level expressed their perceptions of the barriers to enhancing kitchen safety. Barriers are discussed by sorting them into four fundamental categories: economic barriers, technical barriers, legal barriers, and social barriers.

4.1.1 Economic Barriers

The responses from experts highlight that economic barriers are a significant obstacle to enhancing kitchen safety. These barriers include limited financial resources, high costs associated with safety investments, and competing priorities between maximising profits and investing in safety measures. R3 emphasised *"the challenge posed by limited financial resources, making it difficult to invest in safety equipment and implement safety measures"*. Similarly, R4 and R5 pointed out *"the high costs involved in upgrading equipment and implementing safety measures, which may strain budgets and hinder investments in safety technology"*. Additionally, R6, R7, R8, and R9 further underscore the economic constraints faced by establishments, such as *"lack of financial resources and the requirement of high investments for safety at workplace implementation"*. These barriers pose significant challenges in allocating funds for safety initiatives, especially when competing demands for resources exist.

4.1.2 Legal Barriers

This analysis focuses on the legal barriers identified by experts. R3 highlighted *"challenges posed by complex and ever-changing safety regulations in the kitchen. These regulations can create confusion among staff and management, leading to compliance issues and potential safety hazards"*. Additionally, R3 noted *"the inadequate enforcement of safety regulations by regulatory authorities, further exacerbating the problem and undermining the effectiveness of existing safety measures"*. Similarly, R5 emphasised *"presence of inadequate legal frameworks for kitchen safety"*. This lack of comprehensive regulations and guidelines leaves room for ambiguity and inconsistency in safety practices across different establishments. Without clear legal standards, kitchen staff may struggle to implement effective safety measures, increasing the risk of accidents and injuries. Responders R3 and R5 underscore the significant impact of legal barriers on kitchen safety. Although there are few related acts (Food Act No. 26 of 1980, Public Health Act No. 22 of 1952, Occupational Safety, Health and Welfare Act No. 28 of 2000), complex and ever-changing regulations, coupled with inadequate enforcement and legal frameworks create challenges for establishments in ensuring compliance and maintaining a safe working environment.

4.1.3 Social Barriers

This part focuses on the social barriers identified by respondents. Experts highlighted various social barriers that hinder efforts to enhance kitchen safety. R1 emphasised the *"challenge of employees refusing to wear personal protective equipment (PPE) and the potential safety risks associated with occasional understaffing in the kitchen due*

to high turnover rates". Similarly, R3, R4, R5, R6, R7, R8, and R9 identified "resistance to change among kitchen staff as a significant social barrier". This resistance may stem from cultural norms, ineffective communication channels, and a lack of trust between management and employees. Additionally, R3 highlighted "language barriers as another obstacle that could impede effective communication and understanding of safety protocols". Moreover, R10 reiterated the "issue of resistance to change and negligence towards using PPE among kitchen workers, emphasising the importance of addressing these behaviours to enhance kitchen safety". The responses from experts underscore the significant impact of social barriers on kitchen safety. Resistance to change, negligence towards using PPE, communication challenges, and cultural factors all contribute to a less safe working environment.

4.1.4 Technical Barriers

Enhancing kitchen safety involves addressing various technical barriers that impact the functionality and effectiveness of equipment used in the kitchen environment. This part focuses on the technical barriers identified by respondents. R3 and R4 emphasised the "*challenge of outdated and malfunctioning equipment in the kitchen*". This includes outdated technology and equipment that is not in satisfactory condition, which can compromise safety and efficiency in food preparation. Similarly, R5 and R6 highlighted the "issue of inadequate equipment and outdated technology as significant technical barriers". Moreover, R7, R8, and R9 pointed out the "*presence of faulty and outdated equipment in many establishments, which poses challenges to maintaining a safe and productive kitchen environment. In some cases, maintenance staff failures were also identified as contributing to technical barriers*". Responses from experts highlight the significant impact of technical barriers on kitchen safety. Outdated equipment, inadequate technology, and maintenance failures can all compromise safety standards and increase the risk of accidents and injuries in the kitchen.

4.2 STRATEGIES TO ENHANCE KITCHEN SAFETY

Through the perceptions of interviewees, it was discovered that although several measures are in practice to enhance kitchen safety, majority of the preventive measures are not effectively being followed in the Sri Lankan context. Therefore, the strategies suitable for the Sri Lankan context were identified through the suggestions of experts and are presented in this section.

Proper staff training

Working in a busy kitchen is exposing various accidents. Hence, six of the interviewed experts mentioned that proper staff training is a good way to enhance kitchen safety. R2, R3, and R8 suggested that "*proper training in safe handling techniques for knives, lifting heavy objects, and using equipment minimise the risk of injuries, and it is required improve knowledge of proper body positioning to avoid back strain and repetitive stress injuries*". According to the opinions of R6 and R7, "*training on effective communication and stress management techniques can help staff maintain composure during busy periods*". R9 mentioned, "*ergonomics training empowers staff with safe handling practices, minimising the risk of injuries*". Therefore, it is categorised as an important strategy for mitigating kitchen accidents.

Regular Inspections and Audits

Several experts emphasised daily inspections and audits as the best way to mitigate kitchen accidents. R5 mentioned that "*regular inspections, ideally conducted daily, allow for the proactive identification and correction of potential hazards before they cause accidents*". However, R4 stated that "*inspections ensure equipment is in proper working order. Dull knives, malfunctioning appliances, or leaking faucets can all pose safety risks. Regular inspections allow for timely repairs and replacements, preventing accidents caused by faulty equipment*". These perspectives on the value of regular inspections highlight their multifaceted role in kitchen safety.

Adoption of Advanced Technology

Among the interviewees, R1 highlights that "*the adoption of advanced technology is the foremost solution for kitchen safety enhancement*". R2 further expands on this by highlighting the importance of modern kitchen equipment with built-in safety features, emphasising the tangible benefits such equipment can offer in accident prevention. Similarly, R8 highlights the importance of the implementation of automated monitoring systems in kitchens. R8 further emphasised the importance of automated monitoring and controlling technologies in augmenting human efforts and reducing the likelihood of accidents stemming from human errors. The responses collectively emphasised the significance of technological advancements in mitigating kitchen accidents.

Maintaining High Housekeeping Standards

Among the respondents, R1 emphasised that "*maintaining high housekeeping standards is crucial because a clean and organised kitchen reduces the risk of slips, trips, and falls*". R5 mentioned, "*I firmly believe that cleanliness is paramount in preventing accidents in the kitchen, and a clean kitchen reflects professionalism and instils a sense of pride among staff, motivating them to maintain high standards*". However, R7 and R8 stated that "*in my experience, negligence in housekeeping is often a root cause of many kitchen accidents*". Implementing strict housekeeping schedules can significantly reduce the occurrence of accidents.

Job Rotation

The respondents also highlighted the importance of job rotation in minimising kitchen accidents. R9, R4, and R6 mentioned, *“Job rotation is the best way to break the kitchen workers’ engagement in high-intensity physical activities for a prolonged period.”* Normally, job rotation positively minimises job-related stress and fatigue since the workers keep changing their tasks.

Implementing Ergonomic Workstations

R1 emphasised that *“ergonomic workstations can significantly reduce strain and injuries among kitchen staff by optimising their work environment to minimise physical stress”*. In addition, R8 revealed that *“ergonomic workstations need to be implemented in the hotel industry due to the high workload of the kitchen”*. According to the opinions of the respondents, it is necessary to implement ergonomic workstations so that staff can do their jobs perfectly.

Providing Good Quality PPEs

R2 highlighted the importance of providing high-quality PPEs to kitchen staff, stating that *“proper gear can mitigate the risk of injuries from burns, cuts, and other hazards”*. In addition, R4 stated that *“when I am supervising the kitchen staff, they revealed that they are unable to do their job using PPEs. Because they feel uncomfortable”*. This issue needs to be addressed when directing the staff to use PPEs. Meanwhile, R6 mentioned that proper quality PPEs help staff to do their job smoothly.

Developing Proper Communication Channels

According to R7, proper communication is important in the kitchen for effective hazardous awareness, emergency response, feedback, and improvement of the kitchen environment.

Developing Risk Assessment Procedures

R3 stressed the necessity of conducting comprehensive risk assessments in the kitchen to identify potential hazards and develop targeted mitigation strategies to address them effectively. Identification of potential hazards in the kitchen environment helps mitigate kitchen accidents.

Proper Equipment Use and Maintenance

R4 emphasised the importance of proper equipment use and regular maintenance to prevent accidents caused by malfunctioning and improperly operated machinery. Adequate and proper equipment should be provided to perform the job safely and it is also required to follow a proper maintenance schedule.

Appointing a Safety Manager

R5 highlighted the importance of the appointment of a dedicated safety manager in the kitchen to oversee safety protocols, conduct regular inspections, and coordinate training initiatives to ensure compliance with safety standards. In addition, R8 mentioned, *“kitchen safety is controlled by our management staff, but it is better to have a safety manager to enhance hotel safety”*. Through the implementation of these strategies, kitchens can uphold elevated operational standards and minimise potential hazards.

Providing Proper Supervision

R6 and R10 underscored that *“according to my experience, proper supervision directly impacts on reducing kitchen accidents. Chefs always need to supervise our staff and advise them to reduce the risk of kitchen accidents”*. In the meantime, the importance of adequate supervision in preventing accidents was discussed, with the idea being that careful monitoring of kitchen operations can assist in spotting possible safety concerns before an accident occurs.

Implementing Fire Training

R7 highlighted that *“in my opinion, it is better to have fire training for kitchen staff, including proper handling of fire extinguishers, evacuation procedures, and fire prevention measures to minimise the risk of fire-related accidents”*. R9 revealed that *“one day when I asked a worker about the emergency response procedure in case of fire, he was not aware of the necessary procedures. Therefore, it is necessary to conduct fire training at the recruitment stage”*.

These approaches collectively address various aspects of accident prevention, encompassing proactive and reactive measures.

5. Conclusions

The kitchen is one of the riskiest areas in hotels. Jobs in kitchens entail handling hazardous substances and exposing individuals to the risks of injuries or illnesses. Various factors collectively contribute to the occurrence of kitchen accidents, emphasising the importance of understanding and addressing these risks in hotel kitchen environments. According to literature and empirical findings, practising OHS in kitchens is still a deficiency. As a result, OHS issues among kitchen staff have occurred, such as burns, falls, slips, finger cuts and lacerations, eye injuries, heat exhaustion, chemical exposure, electrical shocks, musculoskeletal injuries, repetitive strain injuries, and stress-related disorders. When analysing the reasons for kitchen accidents through the literature synthesis, the leading causes were identified under four categories: work environment-related, people-related, material and equipment-related, and management procedures and methods-related causes. The barriers to enhancing kitchen safety were identified under the

categories of economic barriers, social barriers, technical barriers, and legal barriers. The final target was to propose strategies to prevent accidents and enhance the safety of kitchen environments. Training and awareness, technology adaption, adequate supervision, managerial controls, standards and adequate auditing/reviewing were identified as some of the important strategic measures to ensure kitchen safety in the Sri Lankan context.

The study results benefit the practitioners in creating plans and strategies to successfully address the primary issues and improve the health and safety of kitchen employees in hotels in Sri Lanka. Moreover, this study contributes to the research sector by focusing on an under-explored area of kitchen safety research in the Sri Lankan context. Building on this study, future research can be conducted focusing on areas such as exploring the impact of technological interventions on kitchen safety in hotels and assessing OHS management systems in kitchens across various hotel categories.

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