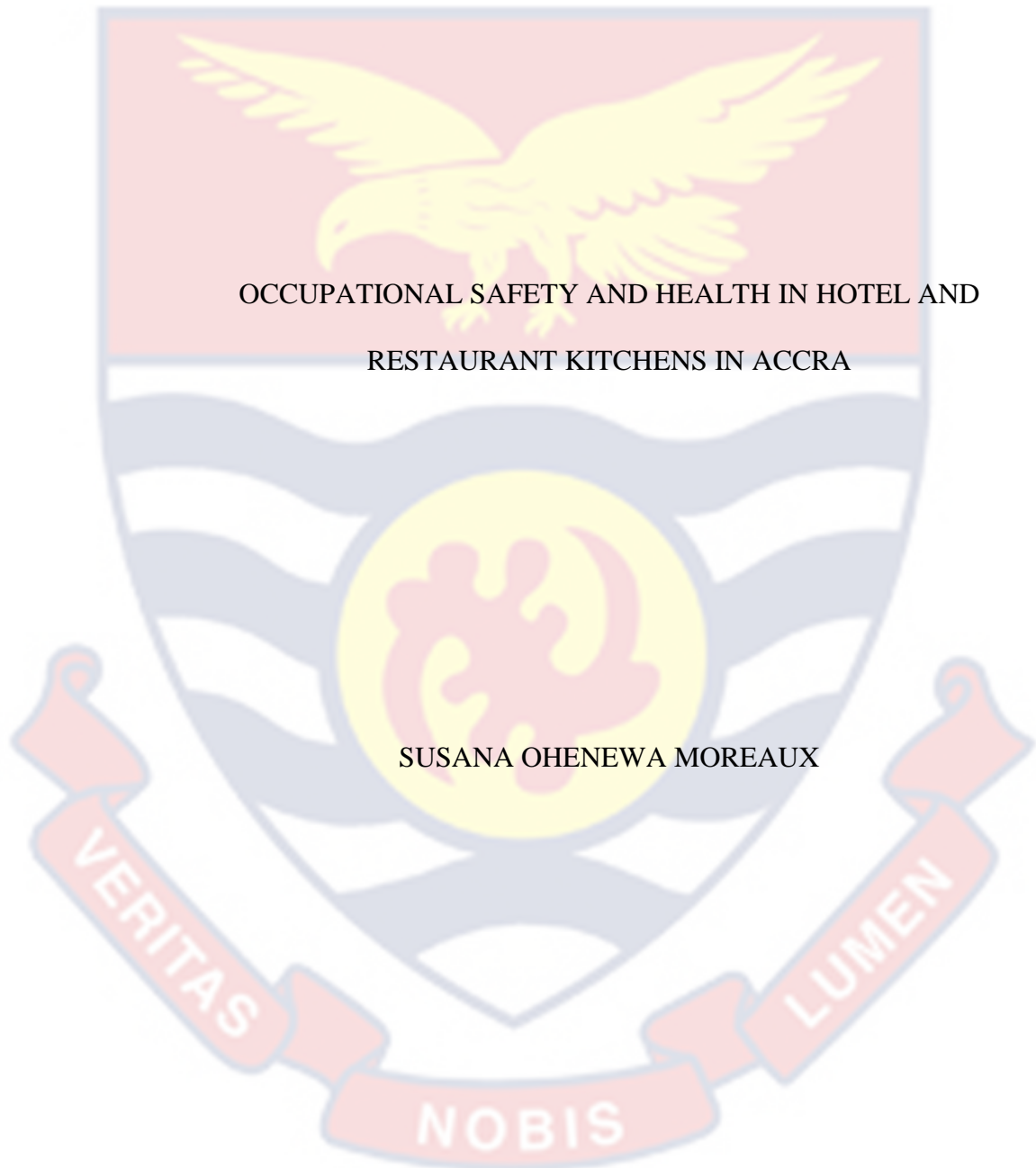


UNIVERSITY OF CAPE COAST



OCCUPATIONAL SAFETY AND HEALTH IN HOTEL AND  
RESTAURANT KITCHENS IN ACCRA

SUSANA OHENEWA MOREAUX

2022



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OCCUPATIONAL SAFETY AND HEALTH IN HOTEL AND  
RESTAURANT KITCHENS IN ACCRA

BY  
SUSANA OHENEWA MOREAUX

Thesis submitted to Department of Hospitality and Tourism Management of  
the Faculty of Social Sciences, College of Humanities and Legal Studies,  
University of Cape Coast, in partial fulfilment of the requirements for the  
award of Doctor of Philosophy degree in Hospitality Management

DECEMBER 2022

## DECLARATION

### Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ..... Date .....

Name: Susana Ohenewa Moreaux

### Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast

Principal Supervisor's Signature ..... Date .....

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Co-Supervisor's Signature ..... Date .....

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Dr. Mrs. Addison-Akotoye Evelyn

## ABSTRACT

This study assessed occupational safety and health (OSH) of selected restaurant kitchens in Accra. A cross-sectional design, mixed-methods approach and a multi-stage sampling technique were adopted for the study. Data were obtained through structured interviews with 320 kitchen staff, 10 in-depth interviews with managers and observations in 94 facilities between June and August, 2021. The data were analysed using Chi-square Test of Independence, Analytic Hierarchy Process and thematic analysis. The study established that the kitchen staff of hotels and restaurants in Accra encountered five types of hazards namely physical, psychosocial, ergonomic, chemical and biological hazards. These hazards resulted mainly in injuries, illnesses and other health conditions like cuts, burns, headaches and stress. These injuries and illnesses have affected the facilities mostly in terms of cost. Efforts noted on the part of staff to minimize the effects of the prevailing hazards on their lives were mainly the use of personal protective equipment (PPE). However, it was noted that the PPEs were not used appropriately. Management also safeguarded the safety and health of their facilities in the area of electrical safety, staff welfare, fire-fighting and good ventilation/lighting, but not in the areas of risk assessment, OSH training, first aid and provision of PPEs. It is concluded that management and staff played their roles in ensuring safety and health in the restaurant kitchens. However, there were lapses in the execution of the roles. In light of the fact that there were hazards and records of staff injuries and illnesses, it is recommended that Ghana Tourism Authority (GTA) and Ghana Fire Service should continue to sensitize both staff and hotel and restaurant managers on the need to effectively play their roles in ensuring safety given that safety and health is a collective responsibility.

## KEY WORDS

Hazards

Hazards preventive measures

Kitchen staff

Occupational safety and health

Restaurants

Workplace injuries/illnesses





## ACKNOWLEDGEMENTS

My sincere gratitude goes to my supervisors, Prof. Francis Eric Amuquandoh, Prof. Ishmael Mensah and Dr. Mrs. Evelyn Addison-Akotoye for their dedicated involvement, cooperation and assistance throughout every phase of the development and completion of this thesis. My appreciation also goes to all lecturers at the Department of Hospitality and Tourism Management, for their support and encouragement, especially Prof. Kwaku Adutwum Boakye, Prof. Issahaku Adams, Prof. Mrs. Eunice Fay Amissah, Dr. Mrs. Ewonam Afenyo-Agbe and Dr. Charles Adongo who always offered their insightful advice and explanation for the success of this study.

Special thanks go to Mr. Spencer Doku, Dr. Mrs. Adelaide Mensah-Kuffour, my field assistants and all managers and kitchen staff of hotels and restaurants in Accra, whose efforts made the data collection feasible. I say *muchas gracias* to Universitat de Girona, Facultat de Turisme for the opportunity granted me as an Erasmus+ exchange student which greatly facilitated the analysis and discussion stage of the thesis. To my colleagues and friends, Mawufemor, Sampson, Elizabeth, Mary, Lily, Aba, Aziz, Eugenia, Edith, Quame, Linda, Sandra, Joana, Victoria, George, Enerstina, Christopher, Oduro, Takyi and Acquah, thank you for being there for me.

My heartfelt indebtedness goes to my dear husband Prof. Akwasi Kumi-Kyereme. You have been my greatest pillar of support for this phase of my life. Thank you for your financial assistance, advice and promptings for the success of this study. My beloved children Kwabena, Afia and Fifi, thank you for your endurance and tolerance. Finally, to my father; Mr. Francis Ekow Moreaux and sister, Josephine Moreaux, I say I am grateful for your prayers and well wishes.

## DEDICATION

To my children, Kwabena and Afia and my late mother, Beatrice Moreaux





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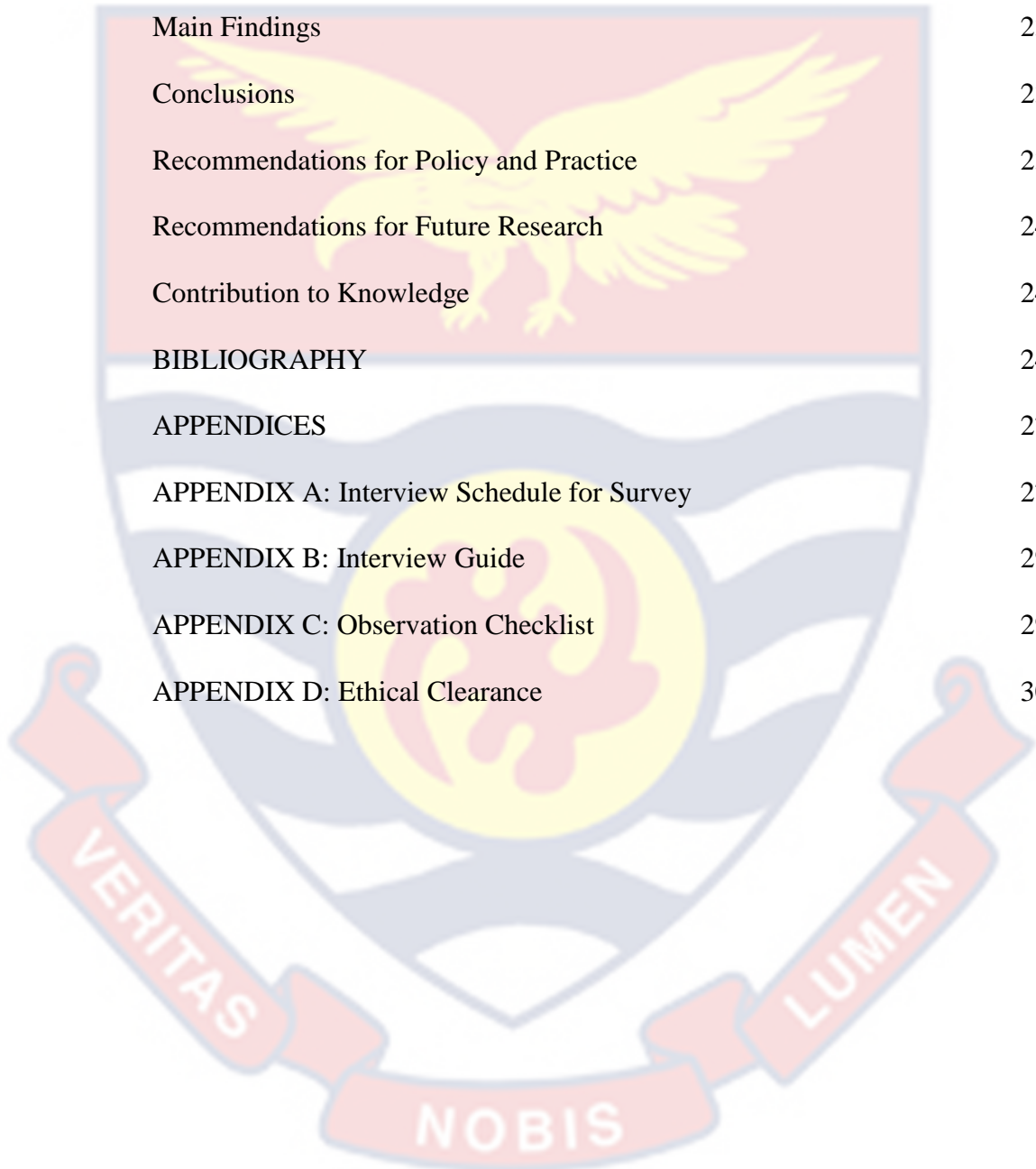


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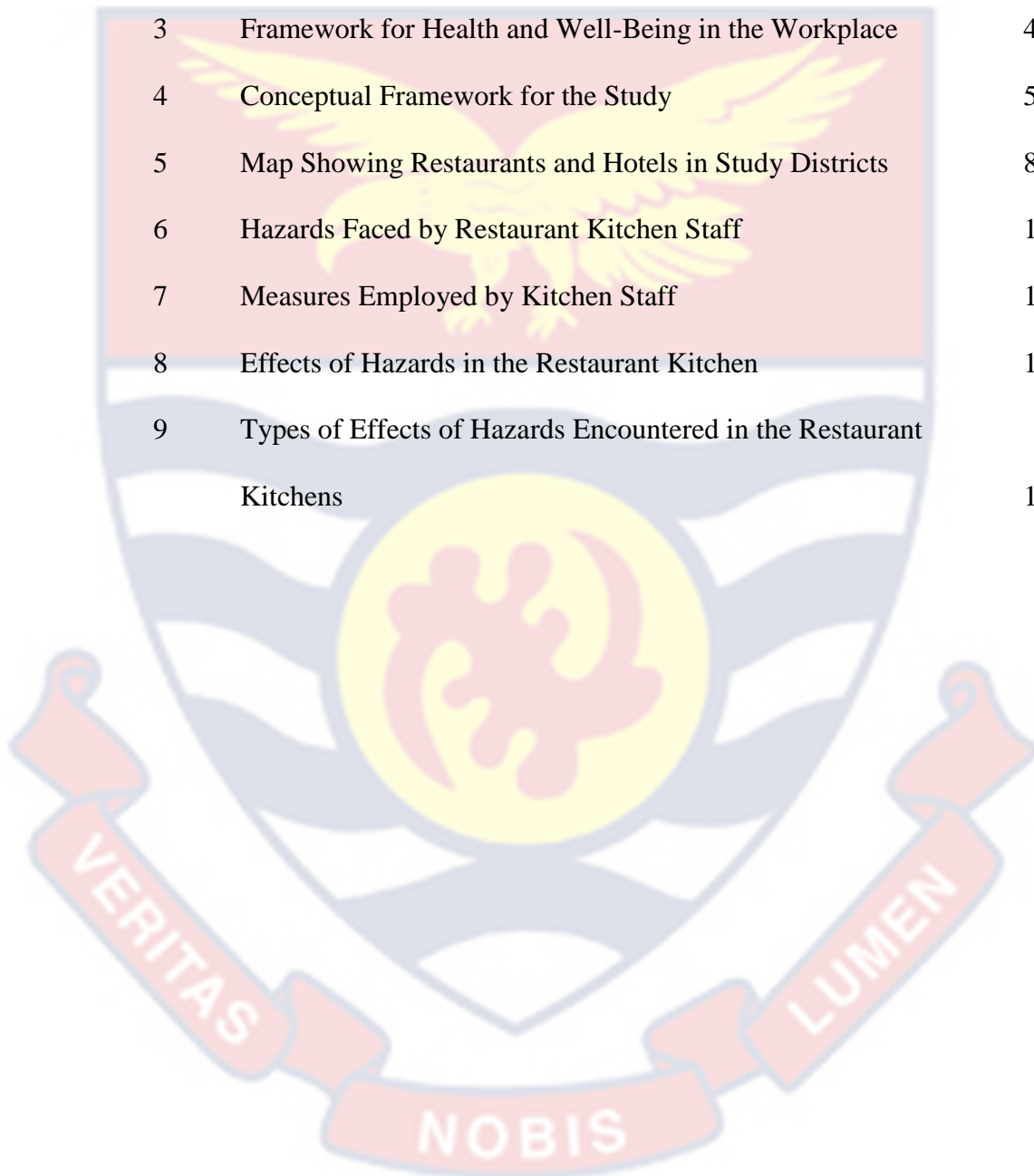
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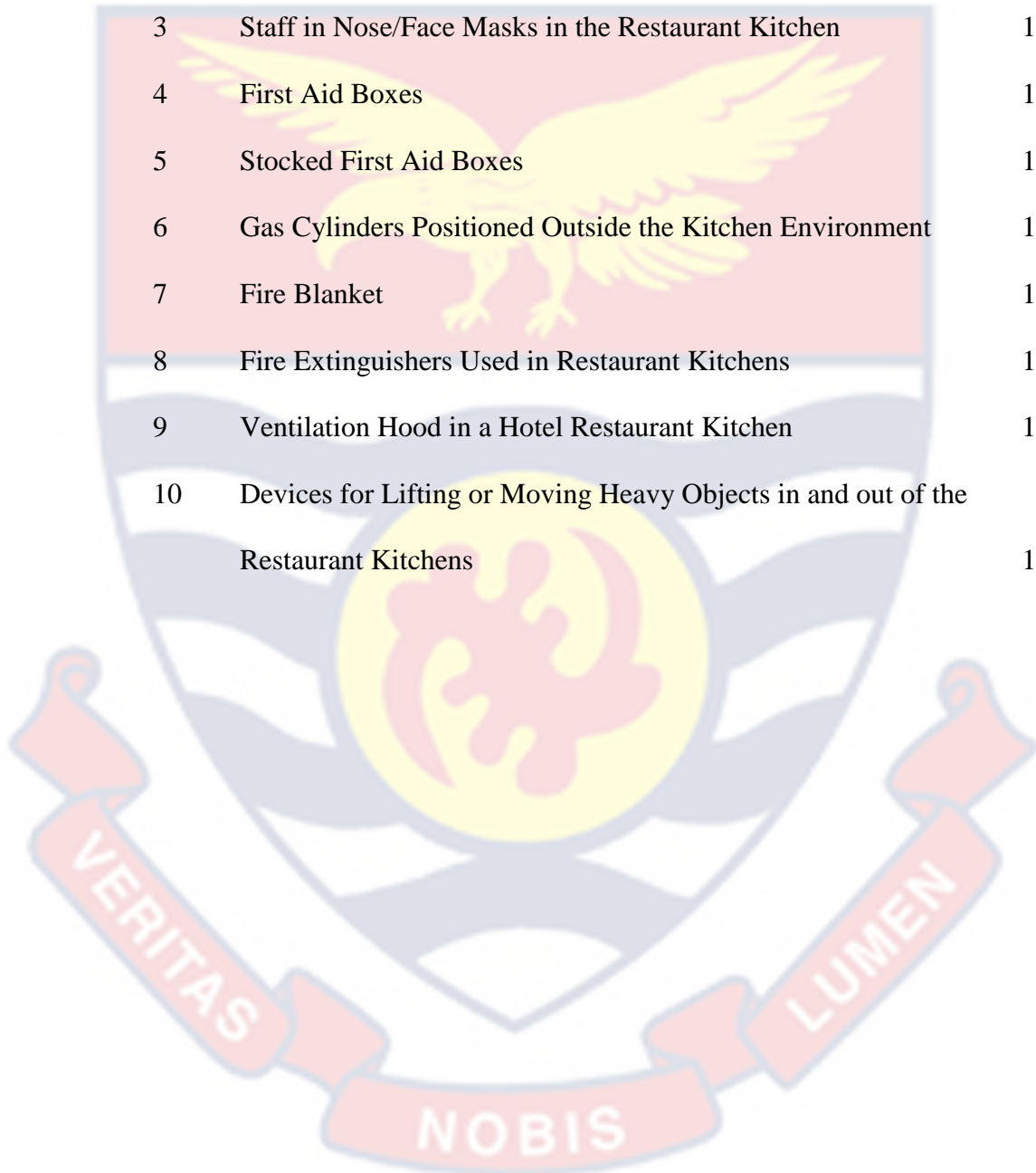
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**LIST OF ABBREVIATIONS**The background of the page features a large, semi-transparent watermark of the University of Cape Coast logo. The logo is a shield-shaped crest with a yellow eagle with outstretched wings in the center. Below the eagle is a yellow circle containing a red and white emblem. At the bottom of the shield is a red banner with the Latin motto "VERITAS NOBIS LUMEN" in white capital letters.

ACGIH	American Conference of Governmental Industrial Hygienists
FDA	Food and Drugs Authority
GDP	Gross Domestic Product
GSA	Ghana Standards Authority
GSS	Ghana Statistical Service
GTA	Ghana Tourism Authority
IDI	In-dept-Interview
ILO	International Labour Organisation
LOSH	Labour Occupational Safety and Health
OATUU	Organisation of Africa Trade Union Unity
OSH	Occupational Safety and Health
OSHE	Occupational Safety and Health Environment
PPEs	Personal Protective Equipment
SDGs	Sustainable Development Goals
SPSS	Statistical Product and Service Solutions
TLV	Threshold Limit Value
WHO	World Health Organisation



## CHAPTER ONE

### INTRODUCTION

#### Background to the Study

Occupational safety and health is one of the most important issues confronting employees as well as industries worldwide. Statistics show that almost 374 million injuries and illnesses, with nearly 2.8 million deaths of workers occur every year (International Labour Organisation [ILO], 2019a; ILO, 2019b). This is estimated to cost an annual loss of about \$1.25 trillion in terms of productivity losses, health care bills, and compensations (Reid, Lenguerrand, Santos, Read, Lamontagne, Fritchi, & Harding, 2014). The outcome of these losses further results in approximately 4% loss of Gross Domestic Product (GDP) globally (Eyayo, 2014; ILO, 2012) and 2% - 10% loss in country estimates (Takala, Hämäläinen, Saarela, Yun, Manickam, Jin, Heng, Tjong, Kheng, Lim, & Lin, 2014; Tompa, Mofidi, Heuvel, Bree, Michaelsen, Jung, Lukas Porsch, & Emmerik, 2021). In Ghana, the loss is estimated at 7% of GDP (Adei & Kunfaa, 2007). Access to safety and health in the workplace according to Moyo, Zungu and Kgalamono (2015), has globally become significantly a confusing, long and complicated issue. A situation attributed largely to inadequate measures to ensure occupational safety and health at most workplaces (Reid et al., 2014).

The direction of occupational safety and health is tilted towards the provision and improvement of a healthy working environment (Srivastava, 2017). Such an environment is described as a place where together, people work for the realization of the vision of the organization which is for the health and well-being of the workers as well as the society (Pravamayee, 2014). As

Srivastava (2017) indicates, occupational safety and health involve the promotion and maintenance of the highest degree of physical, mental and social well-being of workers. In other words, it is aimed at safeguarding the life of workers from risks resulting from factors that are antagonistic to good health in the line of duty. In Maslow's Hierarchy of Needs, issues of occupational safety and health are considered as the second level of human needs for growth and survival (Maslow, 1943). This suggests that the subject of occupational safety and health is a very imperative prerequisite to the existence of human beings.

Working in a conducive, hygienic, and safe environment is not a privilege, but a fundamental human right as stipulated in most national legislations. For instance, section 24:1 of the Constitution of Ghana states that "Every person has the right to work under satisfactory, safe and healthy conditions, and shall receive equal pay for equal work without distinction of any kind" (Republic of Ghana, 1992). Thus, occupational safety and health is valued as a basic human right which must be guaranteed and enjoyed by all personnel in the workplace. Additionally, ensuring a safe, secure and hygienic working environment is one of the global targets under the Sustainable Development Goals (SDGs). Specifically, Target 8 of Goal 8 seeks to 'protect labour rights and promote a safe and secure working environment for all workers, including migrant workers, particularly women migrants, and those in precarious employment (United Nations, 2015).

In describing the concept of occupational safety and health, there is a need to disintegrate the two terms. First of all, the term occupational safety hubs on the processes of implementation of various acts to prevent occupational accidents and diseases (Kilic & Selvi, 2009). It simply deals with controlling

hazards to a satisfactory level. These hazards are defined as “sources of potential harm to human health, property or environment, and under certain conditions, hazards may lead to accidents which typically occur suddenly and unexpectedly causing immediate injuries and losses” (Lind, Nenonen, & Rahnasto, 2008, cited by Rajini, Fernando, & Serapperum, 2012, p. 295). Similarly, Aluko, Adebayo, Adebisi, Ewegbemi, Abidoye and Popoola (2016), and Jekayinfa, Ojediran, Adebisi and Adeniran (2009), defined hazards as conditions that could cause adverse consequences under undesirable circumstances. These hazards are grouped into mechanical, physical, psychosocial and chemical hazards (Grégoris, Deschamps, Salles, & Sanchez, 2017).

Occupational health, on the other hand, according to the World Health Organization [WHO] (2022), is all about the safety and health of the workplace with the main emphasis on promoting and maintaining the good health of workers. In this regard, Steenkamp and Van Schoor (2002), cited by Amponsah-Tawiah, Akomeah, Ntow and Mensah (2016), described it as being so grave and pricy to every country, government, union, manager and worker. Occupational health is defined as “the protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work” (WHO, 2002; p. 13). Alternatively, it is a means of intervention to ensure the provision of comprehensive health for workers (Ahmad, Qadir, Yasir, Irfanullah, Khan, Aslam, Iqbal, Sikander, & Waqas, 2012).

Occupational safety and health has been defined variously by different authors in the literature. Alli (2008, p. vii), defined it as the “science of the anticipation, recognition, evaluation and control of hazards arising in or from

the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment". Similarly, Taderera (2012) described it as a discipline, that deals with the protection and promotion of the health of workers by avoiding injuries and diseases connected to the workplace. Further, Amponsah-Tawiah et al. (2016) considers occupational safety and health as a summary of a worker's psychological, emotional and physical welfare allied to the organization of the work a person is engaged in. These definitions connote that, occupational safety and health are all about laid down procedures and tactics established at workplaces to identify and eradicate any hazardous element that poses a threat to the wellbeing of the workers in order to guarantee safety and health that will benefit the worker and society as a whole. This assertion is based on the popular axiom that one needs to live to work.

The origin of occupational health and safety may be traced to Hippocrates (460-370 BC), whose writings depicted the terrible working conditions of workers about the incidence of lead poisoning noted among miners (Gochfeld, 2005). In 23-70 AD, Pliny also wrote on the occupational health of miners who were exposed to lead, mercury and sulphur without any form of protection and the use of membranes as masks among refiners which are considered inadequate for protection. In the later part of the 15<sup>th</sup> century, a German physician, Ulrich Ellenbog in 1473 is said to have written a Treatise on the Poisonous Wicked Fumes and Smokes that gold-smiths and other metal workers were exposed to at the workplaces (Gochfeld, 2005).



The 16<sup>th</sup> century also documented a monograph published by a Swiss named Paracelsus, on "lung sickness" suffered by miners as a result of climate and vapour of the mines in 1587 (Abrams 2001). A book that was published in Latin by Ramazzini in 1713 on the *De Morbis Artificum Diatriba* with a literary meaning of the disease of workers was added to literature. As the issue of occupational ill-health among workers continued to linger, Thackrah (1832), in addition, heightened the existence of occupational safety and health by reporting on the high mortality rates observed mostly among manufacturers. Specifically, in Ghana, the introduction of the Factories, Offices, and Shops Act of 1970 shows the existence of the issue of occupational health and safety in the country and according to Annan, Addai and Tulashie (2015), its conception in the industries have existed before the introduction of the Act.

Throughout the world, about 20% - 50% of workers are exposed to numerous hazards at various workplaces (WHO 2014, cited in EL-Menyar, Mekkodathil, & Al-Thani, 2016). The majority of these workers are reported to come from developing countries including Africa, where the growth of industrialization is on the rise (Alli 2008; Gizaw, Gebrehiwot, & Molla, 2014; Kim, Park, & Park, 2016; WHO 2014, cited in EL-Menyar, et al., 2016). This implies that, with the growth of industrialization in Africa and for that matter Ghana, a large proportion of its workers may be exposed to numerous hazards at the workplaces which could subsequently result in injuries. Aside the issue of industrialization, the expansion, and the acceleration of service sectors are also considered another driving force for the increased rate of workers with work-related health problems (Jilcha & Kitaw, 2016).

One of such industries is the hospitality industry, which is labelled as a labour-intensive industry, where employees play a significant role in the running of all aspects of its activities (Aynalem, Birhanu, & Tesefay, 2016; Baum, 2013; Cheronu, 2011; Tiwari, 2015). The industry involves a wide range of businesses including hotels and restaurants which form a significant part of an economy (Srivastava, 2017). In Ghana, the restaurant segment of the hospitality industry is affirmed as the largest and fastest-growing segments in the country with a growth rate of 20% in the economy (Peters & Kontor-Kwateng, 2016). Aside from this, the food service sectors also contribute significantly to the revenue of the hospitality industry (Kuhn, Benetti, Dos Anjos, & Limberger, 2018).

The hotel and restaurant sectors of the hospitality industry play a role in the world of employment. These sectors employ full-time employees, part-time and contract staff and unskilled and even young workers (Baum, 2013; Ramesh & Manimegalai, 2018; Senya 2017; Srivastava, 2017; Tiwari 2015). The evidence of these assertions is echoed in the 2015 Labour Force Report, where it is cited that, there are 405, 658 persons between the ages of 15 years and above, who are employed in accommodation and food service activities in Ghana (Ghana Statistical Service [GSS], 2016).

The hotel and restaurant sectors also strive to help meet the increased demands of customers who through a wide scale of urbanization and busy lifestyles, consider dining out a necessity to satisfy the changes in their dietary habit and pattern (Fraikue, 2016; Horsu & Yeboah, 2015; Tiwari, 2015). Generally, these sectors constantly provide food, drinks, shelter, comfort and



other unspecified services to create a comfortable atmosphere to take care of the psychological needs of the customers (Hannerz, Tuchsén, & Kristensen, 2002).

Considering the significant functions of the various departments in helping meet the demands of customers of restaurants and hotels, the kitchen plays a vital role. It helps to provide quality food which is considered a prime product that plays a critical role in the restaurant business which is measured as highly competitive (Namkung & Jang, 2007). In other words, the success of a restaurant and a hotel business is heavily built around the popularity of its food and efficient services (Dareker & Peshave, 2016). This can effectively be achieved and sustained through effective performance of a sedulous, and healthy kitchen staff of the restaurants and hotels to satisfy guests (Amran, Ghazali, & Hashim, 2019). That is, the efficient and healthy kitchen staff will help quicken the food and service delivery that customers demand as an element of satisfaction to stimulate repeat restaurant patronage; subsequently having a direct correlation to the business's overall sales (Adiele & Kenneth-Adiele, 2017). Thus, addressing the safety and health concerns of restaurants and hotels is imperative for the success of hospitality businesses.

Despite the importance of the kitchen to the success of the hospitality business, it remains one of the complex areas in the hotel and restaurant environment where staff is exposed to harsh working conditions and several hazards (Bindu & Reddy, 2016; Malik & Rather, 2017). These pose several risks and cause injuries and illnesses among the staff. In the kitchen area, there are various types of risk factors that emanate from the workload and type of materials handled (Tomita, Muto, Matsuzuki, Haruyama, Ito, Muto, Haratani, Seo, Ayabe, & Katamoto, 2013) which impede staff performance (Harini,

Sudarijati, & Kartiwi, 2018). Besides, there are issues of abusive behaviours such as harassment and violence from co-workers and management within the commercial kitchen setting (Baum, 2013). These acts have caught the attention of most media houses and could tarnish the image of such organizations. Evidence of such occurrences of abusive acts at a workplace is the case reported of a female worker who was assaulted by her supervisor in a Marwako restaurant in Accra in Ghana on the 26<sup>th</sup> of February, 2017 (Graphic online, 2017).

Mostly, the staff spend about 6 to 8 hours in the kitchen, performing various tasks related to cooking. During these periods, staff discharges its daily obligations according to a schedule (Syed Ali, Kamat, & Husin, 2018). The responsibilities of the staff include preparing raw materials, cooking, washing utensils, preparing plates, serving and delivering orders to clients. As asserted by Kokane and Tiwari (2011), the volume of work staff performs in the kitchen depends on the scope of the restaurant. For instance, in smaller restaurants, the habitual task of a cook involves storing ingredients, cooking food, and cleaning and maintenance of the kitchen area among others (Jeong, 2015).

Regularly, the cooking task necessitates the preparation of a variety of dishes at various times in the kitchen. These dishes are sometimes prepared in large quantities, within a short period and also in a hygienic manner (Tomita et al., 2013), therefore, forcing the kitchen staff to work under pressure. Usually, during working hours, kitchen staff stretch to reach high surfaces, resulting in uncomfortable lifting or bending of the shoulders, elbows and arms in the discharge of their duties. In the course of doing this, some other parts of the body like the neck, hand, wrist and back are affected (Syed Ali et al., 2018,

Gangopadhyay, Ray, Das, Das, Ghoshal, Banerjee, & Bagchi, 2003; Mondal, 2012). These uncomfortably lifting or bending of the shoulders, elbows and arms causes irritable pain and discomfort in the affected part of the body.

Additionally, working in the kitchen is typically characterized by standing and moving from one working station to another. The standing could be prolonged or extended during the meal preparation which subsequently results in poor posture (Bindu & Reddy, 2016; Grégoris et al., 2017; Matsuzuki, Haruyama, Muto, Aikawa, Akiyoshi Ito, & Katamoto, 2013). Working in the kitchen further involves the night shift in an extremely hot working environment which could be wearisome and stressful (Grégoris et al., 2017; Matsuzuki et al., 2013). As pointed out by Syed Ali et al. (2018), the mix of items often found including cooking utensils, raw materials or workers in the kitchen also renders the kitchen a harmful working environment. Aside from this, poor quality equipment and poorly maintained ones could as well threaten the safety of the staff in the kitchen (Mondal, 2012).

Due to the intensity of safety, health and labour issues, it is mandated by the 1981 ILO convention (No. 155) for countries to have national policies on the management of occupational health and safety (ILO, 1981). Though Ghana does not have national policy on occupational safety and health, there is the existence of some fragmented safety and health laws used by various ministries, departments and agencies for enforcement. Some of such laws include the Labour Act 2003 (Act 561); the Factories, Offices and Shops Act 1970, (Act 328) which stipulates some regulations about safety and health management at the workplace; and the Workmen's Compensation Law 1987 (PNDC 187)

which also considers workers' safety at the workplace by looking at the compensation for personal injuries caused by accidents.

In addition, the Metropolitan, Municipal and District Sanitary Inspectorate Bye-Laws and the Tourism Regulation, 2016 (L.I. 2238) demand the provision of protective clothing, fire-fighting equipment, first aid box and washroom facility for workers as requirements for the grading of a food and beverage establishment. The ultimate aim of these laws is to ensure a healthy working environment for both employers and employees since, healthy environments and healthy acts are key requirements for certification in occupational health and safety (Garcia, Boix, & Canosa, 2004) in an organization. The objective of these laws is to curb work-related injuries, ailments and death by offering standards that seek to enforce workplace safety and health.

In helping to curb work-related injuries, ailments and death, both employers and employees have roles to play. Employers have to institute and enforce workplace safety and health measures for employees. Such measures for instance as stipulated in the Ghana Labour Act, Act 651 (118 - 120) where employers are required to provide a safe workplace, plant and system; necessary information, instructions, training and supervision; safety appliances, suitable fire-fighting equipment, personal protective equipment (PPE), and teach the workers how to use the equipment. It also requires the employees to use the tools and equipment provided by the employer at the workplace (Republic of Ghana, 2003).



## Statement of the Problem

Occupational safety and health is a key element in achieving sustained decent working conditions and strong preventive safety cultures (Alli 2008) which are vital in influencing economic and social development opportunities (Kavouras, Vardopoulos, Mitoula, Zorpas, & Kaldis, 2022). However, occupational safety and health has remained a serious public health issue owing to the continuous global occurrence of workplace morbidity and mortality which has been very alarming within the preceding decades. The ILO report, from the period of 1996 to 2015 indicated an annual global occurrence of work-related accidents and diseases among workers of which an estimated 2.3 million deaths (Subramaniam, Shamsudin, & Alshuaibi, 2017) were recorded. The ILO 2015 report as cited by Erdogan, Ozyilmaz, Bauer and Emre (2018), also indicates that globally, within every 15 seconds, 153 workers encounter an accident in the workplace, out of which one person dies. The ILO further indicates that 3.9% of the total deaths recorded in the whole wide world annually, are caused by work-related accidents and ailments and 15% of the populace suffer from work-related accidents and diseases (Hughes & Ferrett, 2013).

Occupational mortality and morbidity are known to vary across the world. Africa, including Ghana, is ranked the second-highest (11.8%) after Asia (65.0%) in global work-related mortality. This is followed by Europe (11.7%), America (10.9 %) and Oceania (0.6 %) (ILO, 2019b) in that order. The frequencies of fatal occupational accidents are also four to five times higher in Africa than in Europe (Hämäläinen, Takala, & Kiat, 2017). Precisely, there are 54,000 deaths with 42 million work-related accidents occurring in Africa



annually (Ghana Statistical Service, [GSS] 2016). This shows that the issue of occupational safety and health is significant in Africa.

Like many countries and industries including the hospitality industry around the world, the occurrence of workplace injuries is prevalent in Ghana. The 2015 Labour Force Report shows that persons working in both the accommodation and food industries in Ghana, experienced some form of injury annually (GSS, 2016). This signifies that work-related injuries do not occur only in the accommodation sectors of the hospitality industry in Ghana, but also in the food service sectors as well. As such, research addressing occupational safety and health issues in the various accommodation and food service sectors of the hospitality industry is very imperative in Ghana.

However, out of the literature search, it appears that studies involving these two service sectors of the hospitality industry have received limited attention in Ghana. Most of the studies on occupational safety and health involving the different sectors of the hospitality industry in the literature have largely been skewed to North and South America and Asia (Ambardar, 2015; Ambardar & Raheja, 2017; Guevara, Guaman, Caisa, Chicaiza–Redin, Chasiluisa, & Nuñez, 2017; Hsieh, Apostolopoulos, Hatzudis, & Sönmez, 2014; Paes, Guilherme, Livera, & Valle, Silveira, 2020; Tiwari, 2015; Tsai & Salazar, 2007). The absence of knowledge on occupational safety and health in the various sections of the hospitality industry in Ghana is impeding efforts to ensure occupational safety and health because there is limited understanding of issues pertaining to occupational safety and health in Ghana's hospitality industry. Thus, the need to add to the literature by investigating occupational safety and health in hotels and restaurants to address the imbalance.

Furthermore, compared to many working environments, where unfavourable working conditions could threaten the safety and health of workers, the restaurant environment and particularly, the kitchen is hazardous and is very prone to accidents (Maseko, 2016; Mondal, 2012). This could result in occupational injuries and illnesses that could lead to dire consequences like the loss of production (Hughes & Ferrett, 2013), disability and death (WHO/ILO, 2021). Yet, there is a dearth of published occupational safety and health research on the operations of restaurants in spite of its contribution, to the growth of Ghana's economy (Peters & Kontor-Kwateng, 2016) and the hospitality industry in particular (Kuhn et al., 2018).

The prevailing literature on occupational safety and health in kitchen departments of the hospitality industry is predominant within Asia (Ab Latif, Chik, & Aminudin, 2011; Bindu, & Reddy, 2016; El-Amir & Omar, 2019; Malik & Rather, 2017). The very few studies on occupational safety and health in the hospitality industry in Ghana focused on areas such as hotels (Senya, 2017; Siaw, 2018; Siaw, Khayiy, Mugambi, Siaw, 2018), chop bars (Alfers & Abban, 2011) and institutional catering facilities (Adanse, Atinga, & Yamga, 2017).

Adanse et. al. (2017), in a study on occupational health and safety in kitchens in second-cycle institutions in Bolgatanga focused on the control and prevention of hazard measures in the workstation. The study's focus was on finding out whether employers and employees knew their duties and responsibilities in ensuring safety and health in the working area. It did not pay attention on the staff compliance or employers' implementation of the safety and health measures that are primarily important in ensuring safety and health

in the kitchen. Lack of published research on staff or employers' compliance of the safety and health measures required by the Ghana Labour Act 2003 (Act 561) and the Factories, Offices and Shops Act 1970, (Act 328) makes it difficult to ascertain the extent to which the legislatures are being carried out in restaurant kitchens. This will help inform policy-making and implementation on issues of occupational safety and health in Ghana's hospitality industry.

Also, the studies conducted by Siaw (2018), Siaw et al. (2018), and Alfors and Abban (2011), explored the health and safety risks and hazards in the working environment of housekeepers and indigenous caterers respectively. However, the focus of the effects of the workplace hazards was centred on the workers and not the facilities. Since the level of susceptibility to injuries is not the same in all areas of the hospitality industry (Siaw 2018), there is the need to ascertain the level of occupational safety and health in restaurants which are more prone to hazards. There is also the need to further investigate the effects of staff injuries and illnesses on the facilities.

Even though, occupational safety and health in a workplace such as a kitchen is essential to the successful operation of restaurants in a competitive environment (Molamohamad & Ismail, 2014) such as Accra which holds about 57% of the food and beverage facilities in Ghana (Ghana Tourism Authority [GTA], 2020), occupational safety and health studies in kitchens remain inadequate in this area. It is against this background that, this study ought to investigate occupational safety and health in hotel and restaurant kitchens in Accra.

## Research Questions

The research questions that guide the study are the following:

1. What workplace safety and health hazards do restaurant kitchen staff face in the hospitality industry?
2. What are the effects of hazards in the kitchen on the safety and health of staff?
3. How do staff injuries and illnesses in the kitchen affect the hotels and restaurants?
4. How are hazards prevented by staff in the restaurant kitchens?
5. What are the hazard preventive measures implemented by management?
6. What are the barriers to compliance with safety and health measures in restaurant kitchens?

## Objectives of the Study

The main objective of the study was to assess occupational safety and health conditions in kitchens of hotels and restaurants in Accra. The specific objectives of the study are to:

1. examine the workplace safety and health hazards faced by kitchen staff in the hospitality industry;
  2. ascertain the effects of the existing hazards on kitchen staff;
  3. examine the effects of injuries and illnesses of kitchen staff on hotels and restaurants;
  4. assess the preventive measures that are undertaken by staff to ensure safety and health in the restaurant kitchens;
  5. assess the preventive measures that are implemented by management;
- and



6. Explore the barriers to compliance with safety and health measures in restaurant kitchens.

### **Significance of the Study**

This study is consistent with the global development agenda, the SDG 8, Target 8, which focuses on protecting the rights of all categories of workers and promoting a safe and secure working environment for the workers. The study is envisaged to provide vital information on existing safety and health hazards faced by restaurant kitchen staff, injuries and afflictions suffered and the measures for preventing accidents. This will serve as baseline information for GTA, Food and Drug Authority (FDA), Ghana Standard Authority (GSA), Department of Factories Inspectorate (DFI) and the Metropolitan, Municipal and District Sanitary Inspectorate to develop intervention programmes to monitor the activities of the food service industries in Ghana in relation to safety and health.

Also, the existing types of hazards, injuries, and illnesses identified in hotel and restaurant kitchens will help the facilities assess the weaknesses of their occupational safety and health management systems. This will not only help to enhance the safety and health of the kitchen departments but, others sections of the hotels and restaurants.

Furthermore, a study of this nature, which looks at the occupational safety and health issues within kitchens of hotels and independent restaurants will serve as a reference point for monitoring changes in occupational safety and health situations in the hospitality industry over time. The study will also serve as a comparative case for similar studies that may be replicated in the country and in other sectors of the hospitality industry or occupational fields.



Lastly, the study will deepen the knowledge on occupational safety and health which is currently at its infancy stage in the hospitality industry in Ghana. This study will bring to the fore, the safety and health measures established by the hotels and restaurants to minimize occupational hazards that will lead to accidents and injuries in the kitchen of the hotels and restaurants in Ghana. The findings will provide useful information to the government, policymakers, planners, academicians and other various stakeholders connected to the operations of the hospitality business on how restaurants and hotels are handling occupational safety and health matters in the hospitality industry. For instance, the findings will offer information that may be beneficial in serving as a foundation upon which the drawing of a precise occupational safety and health policy which is currently silent in the Tourism Act, 2011 (ACT 817) by GTA will be built on. This is to safeguard the welfare of workers, not only in the kitchens of hotels and restaurants, but in the entire hospitality and Tourism industry and Ghana which lacks a national occupational safety and health policy as a whole.

#### **Scope and Limitation of the Study**

The study concentrated on kitchen staff in star-rated hotel restaurants and grades of independent restaurants in Accra. It excluded Tema Municipal Area, Dangme West and East Districts. It also excluded other catering establishments such as budget hotels, snack bars, fast food and pubs since they fall outside the scope of this study. In this regard, caution should be applied when generalizing the finding for all kitchen staff in Accra.

The study employed a convenience sampling technique in selecting the respondents for the study. This served as a limitation to the study. Using the convenience sampling technique to select the respondents implied that the responses could not be truly representative of the entire population. As the respondents were selected from a convenient subset of the population, there was a statistical imbalance in the selection of the respondents. This made the sampling prone to biases. Base on this, caution should be applied when generalizing the results.

### **Organization of the Thesis**

The thesis is organised into ten chapters. Chapter one is the introduction chapter of the thesis and it presents issues such as background to the study, statement of the problem, research questions and objectives, and the significance of the study. The second chapter focuses on the theoretical and conceptual frameworks guiding the study. Specifically, the Henrich's Domino Theory, Bird and Loftus's Domino Sequence of Accident Causative Theory and the Framework for Health and Well-Being in the Workplace, as well as concepts relating to occupational safety and health are discussed. Chapter three reviews the available empirical literature pertaining to occupational safety and health. The methods followed in conducting this study are presented in chapter four. Precisely, the chapter discusses the study area, the research philosophy and design, target population, sample size and sampling procedure, data collection and procedure, processing and analysis.

The fifth chapter, discusses the socio-demographic characteristics of the respondents, employment and facilities-related characteristics as well as the hazards they faced in the course of their work. The chapter also discusses the

relationship between respondents' socio-demographic characteristics and employment and facility-related characteristics, as well as the existing hazards in restaurant kitchens. Chapter six looks at the results and discussion on the measures employed by employers and employees to ensure safety and health in restaurant kitchens. The relationship between respondents' socio-demographic characteristics and employment and facility-related characteristics and the measures employed by the kitchen staff to ensure safety and health in the kitchen was also discussed in the chapter.

The seventh chapter focuses on the results and discussions on the barriers to staff and employers' compliance with safety and health measures in restaurant kitchens. Chapter eight discusses the effects of hazards in the restaurant kitchens on staff. The relationship between the effects of hazards on kitchen staff and their socio-demographic characteristics as well as employment and facility-related characteristics were examined in the chapter. The ninth chapter highlights the effects of injuries and illnesses of kitchen staff on hotels and restaurants. The final chapter presents the summary, conclusions and recommendations of the study.

## CHAPTER TWO

### CONCEPTS AND THEORETICAL APPROACHES TO OCCUPATIONAL SAFETY AND HEALTH

#### Introduction

This chapter presents a review of relevant concepts and theories on occupational safety and health. The concepts discussed are occupational safety, occupational health, occupational safety and health together with occupational hazards in the kitchen. The next section focuses on theories and models that have been advanced to explain occupational safety and health situations. These include domino theory, domino sequence of accident causative theory and the model for health and well-being in the workplace. The concluding part of the chapter presents the discussion on the conceptual framework for the study.

#### Concept of Occupational Safety

Safety in a workplace according to WHO (2002), is simply about a workstation devoid of danger. Khan, Mustaq and Tabassum (2014), described it as the physical condition of a workplace which shows the non-existence of hazard to cause harm or any form of injury. Although these two elucidations refer to a total absence of danger at a workplace, an alternative explanation of safety is however given as a state of having a slight occurrence or a total absence of risk of injury resulting from harmful elements in a work environment (Bello, 2012). Defined by Abddllah, Spickett, Rumchev and Dhaliwal (2009) as cited by Sam-Mensah (2018), occupational safety is the protection of workers from physical harm.



The association drawn from all these above explanations indicates that safety at work is about the assurance of the security of a workplace where injuries and or damages to human life and properties are prevented. In other words, the safety of a workplace is skewed towards the conservancy of the physical conditions of a worksite to make it harmless for working. This assertion is in line with Kanten's (2013) view about the fundamental impetus following occupational safety, which is to build a safe environment that is devoid of accidents that might lead to injury in a workplace. To accomplish this, there is a need to control hazards at workstations such as the kitchen. As indicated by Khan et. al. (2014), these risks of harm should be minimized to an acceptable level or eliminated.

Essentially, the practice of occupational safety deals with the identification of risk and the employment of preventive measures to reduce and remove hazards that may result in tragedies at the workplace (WHO, 2002). In relating this concept and the explanation given above to this study, occupational safety can be considered as a secure state of physical conditions of the restaurant's kitchens where existing dangers are identified with measures applied to control and prevent the hazards from causing danger or harm. This will help workers feel unthreatened in the discharge of their duties knowing that the workplace is safe from harm.

### **Concept of Occupational Health**

Occupational health according to the WHO (2022), is to promote and maintain the highest degree of physical, mental and social well-being of workers. It is directed toward the physical states of the mind and body of people present in the workplace (Khan et al., 2014). In other words, the concept is about



the sound state of the mind and body of a worker. Occupational health is about how the nature of a workplace affects the health of individuals or workers and the effect of this health on work which according to Bello (2012), goes beyond just the compliance of safety and health. Comprehensively, such intent of occupational health according to (WHO, 2002, p. 13), is:

- The protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work;
- The development and promotion of healthy and safe work, work environments and work organizations;
- The enhancement of the physical, mental and social well-being of workers and support for the development and maintenance of their working capacity, as well as professional and social development at work; and
- Enabling workers to conduct socially and economically productive lives and to contribute positively to sustainable development.

Drawing from the assertion of Khan et al. (2014), and the aims of occupational health outlined by the WHO (2002), the concept is a comprehensive approach that focuses on helping to promote a healthy working environment. It is about strengthening the physical, psychological and social welfare as well as the general health and personal development of a kitchen staff and the protection of entirely everyone including visitors from injuries and diseases in a restaurant or a hotel environment.

## Concept of Occupational Safety and Health

Linking the two concepts (safety and health) together, occupational safety and health is an area with numerous disciplines that seeks to ensure that, the safety, health and welfare of people engaged in employment are not overlooked in an organization. Its drive as stated by Oluoch (2017), and Bhagawati (2015), is to propose salubrious standards to enhance or foster a safe, healthy and secure working environment that is devoid of work-related injuries, ailments and death of workers. These according to García-Herrero, Mariscal, García-Rodríguez and Ritzel (2012), can be achieved when conditions are created, with capabilities built, in addition to the formation of habits to assist personnel and businesses to work efficiently to avert harmful happenings. Such an effort will not only help to protect employees, but also co-workers, employers, family members, customers, suppliers, community members and the general public who are impacted by the safety of the work environment (Bhagawati, 2015) which is the nucleus of occupational health.

In understanding the concept of occupational safety and health, Alli (2008), indicates that occupational safety and health is about systematically studying, assuming, identifying and controlling hazards to protect the safety and health of workers with an extension of its impact affecting also on the general environment. Relatedly, occupational safety and health are described to involve all factors influencing the health of workers in and outside the workplace (Ahmad, Sattar, & Nawaz, 2016). It, therefore, means that ensuring occupational safety and health will create a healthy working environment devoid of threats and danger to protect staff, equipment and the organization as a whole.

Occupational safety and health as operationalized in this study, is all about the actions or measures put in place to identify and prevent or reduce the existence of hazards in the restaurant kitchen, to improve and maintain the safety and health of all kitchen staff of both hotels and independent restaurants. Alternatively, it is the establishment of measures to effectively prevent workplace diseases and injuries arising from the existence of hazards in restaurant kitchens. This is to help promote and enhance a satisfactory working environment to help stimulate and sustain the maximum level of social, psychological and physical welfare of the kitchen staff during the discharge of their duties.

### **Concept of Occupational Hazards**

A hazard is termed as any condition, an act or an extreme event that has a risk, potential or degree of likelihood of hurting or causing adversative health effects on a person or something (Bello, 2012 cited in Abubakar, 2017). Hazards are all existing elements that threaten or compromise the safety and health of several organizations (Bhagawati, 2015). The sources of hazards comprise intrinsic properties, situations, potential energy, the environment or human factors (ILO, 2006; ILO, 2015). These include work environment, workload, work equipment and materials, work methods and practices (Bello, 2012). In other words, these are the elements with the possibility of causing harm or negatively impacting the health of human beings and the properties of an organization. The implication is that occupational hazards do not only harm or cause injuries to workers, but create an unsafe atmosphere for individuals, as well as damages to equipment and facilities at workplaces.

Such hazards prevailing at the workplace, termed occupational hazards have the potential of causing physical or mental harm in terms of injury or ill health to workers in the course of their job performance (Labour Occupational Safety and Health (LOSH) Program 2010; Tziaferi, Sourtzi, Kalokairinou, Sgourou, Koumoulas, & Velonakis, 2011). In this regard, Asumeng, Asamani, Afful and Agyemang (2015), describe occupational hazards as physical and/or psychosocial features of a workplace that have the potential to result in unwanted consequences which according to Bhagawati (2015), can occur gradually or abruptly. In this study, an occupational hazard is conceptualized as obvious and or intangible tools, conditions, acts or events that constitute a danger in a kitchen environment and steadily or suddenly affect the safety and health of staff in a restaurant kitchen.

According to Afosah (2014), workplace hazards are connected to measurable degrees of danger and the degree of severity of these hazards on the safety and health of workers depends on the amount, duration and frequency of one's exposure to the hazards. This implies that hazards can be measured based on the extent of exposure, duration and the extent of the risk factors present (Asumeng, 2015). Respectively, hazards are identified as the source of harm among workers.

Hazard in workplaces and for that matter, in the food and beverage industry, exists in different forms. According to Golembiski, Sobanski and Wojtkowiak (2016), the categorizations of hazards are connected to hazards existing in the work environment and those from the way work is carried out at the workplace. This classification is what Heinrich (1931), termed unsafe conditions and unsafe acts. These hazards include chemical hazards, physical



hazards, ergonomic hazards, psychosocial hazards and biological hazards (Amfo-Otu & Agyemang, 2016; Sekheta, Sahtout, Sekheta, Kapkovic, & Pantovic, 2018; Srivastava, 2017).

### **Physical hazards**

Physical hazards are identified as environmental factors that tend to cause harm to humans (Maseko, 2016). This type of hazard constitutes agents that cause tissue trauma which occurs through the transfer of energy (Tsai & Salazar, 2007). In other words, physical hazards are considered as conditions within the working environment that serve as threats to the safety or health of workers through energy transfer. The hazards occur through working near hot objects and hot liquids, working with sharp objects or tools, slippery floors and lack of directional signs to the emergency exits and/or blocked stairways and emergency routes, (Commonwealth of Australia, 2012; Qiang & Chow, 2007). Others include inadequacy of equipment and facilities, insufficient protection, and moving body hazards (Qiang & Chow, 2007).

Ahmad et al. (2016), Srivastava (2017), and Qiang and Chow (2007), added to the list by further citing loud noise, vibration, poor lighting, poor ventilation, electricity, radiation, extreme temperatures (hot and cold), humidity, heat and fire as other conditions serving as hazards in the work area. Specifically, in the kitchen environment, the hot temperatures happen through an encounter with hot oils, hot cookware, hot steam from hot dishes or dishwashers, or steamers and hot plates. The cold temperatures also stem from cleaning and dressing frozen foods such as shrimp, chicken, fish and so on which are also daily activities carried out in the kitchen. Again, within the food production unit, hazards in the form of loud noises emanating from metal



cutlery, cooking pots and electromotive-driven kitchen devices such as blenders, and mixers among others (Fischer, Spessert, & Emmerrich, 2014). In addition, radiation, as a hazard comprised of ionizing and nonionizing waves, is generated from the use of microwaves in the kitchen (Assmeng et al., 2015).

Cooking is recognized as the root cause of blazes in the kitchen. How this happens, according to Razon and Ahmad (2017), is through combustible materials placed very close to heat sources, loose-fitting sleeves worn near hot burners, not paying attention to foods being cooked and leaving ovens or burners on after cooking. Another factor mentioned is fire occurring through cooking equipment which also starts with the ignition of food. The assumption is that modern cooking equipment has intense energy input rates and when this is coupled with fat or oil with high auto-ignition temperature, there is a likelihood of a fire occurring in commercial kitchens (Hassanain, 2009; Razon, & Ahmad, 2017). Such equipment is ovens, grills, microwaves, portable cooking devices and deep fryers (Razon & Ahmad, 2017). Some outcomes connected to encountering physical hazards are burns that arise from contact with hot surfaces. Slips and falls occur from slippery floors and cuts are from the use of sharp objects such as knives, blades of machines or tools. Knocks arouse from moving body objects among others (Syed Ali et al., 2018; Kilic & Selvi, 2009; Malik & Rather, 2017; Mondal, 2012).

### **Chemical hazards**

Chemical hazards are related to types of hazards identified to be caused by exposure to chemicals in the workplace (Bhusnure, Dongare, Gholve, & Giram, 2018). These are associated with chemical agents that have interactions with the tissues and cells of the body with an effect of irritation or toxicity (Tsai,

& Salazar 2007). The presence of chemical hazards in the workplace appears in the form of solid, liquid and gases, vapour, dust solvents and cleaning agents (Asumeng et al., 2015; Omoijiade, 2018; Srivastava, 2017; Tziaferi et al., 2011; WHO, 2002). Some of the chemical hazards experienced in the kitchen are toxic compounds that result from the burning of fuel, fumes from cooking, such as nitrogen and carbon monoxide, polycyclic aromatic hydrocarbons (PAHs), and other carcinogenic substances existing in the atmosphere of the restaurant and hotel kitchens (Juntarawijit & Juntarawijit, 2017; Qiang & Chow, 2007).

Cooking oil fumes or fumes from cooking oil are produced and released into the atmosphere of the kitchen environment through methods of cooking foods such as stir-frying or grilling in oil heated at a high temperature (Pan, Chan, & Wu, 2008). In addition, through the degradation of sugar as in the case of the preparation of caramel and treacle used in enhancing the colours of candies, buns and cakes, custard, and drinks, among others, cooking oil fumes are released into the kitchen atmosphere. Furthermore, the pyrolysis of proteins and amino acids, as well as fat degradation during high-temperature treatment, can produce a harmful degraded product. Liquids from cleaning agents, such as ammonia solutions used to clean grease from stove and oven plates, as well as ammonia emanating from refrigerants are contributing elements of the chemical hazards in the kitchen (Awunor, 2011; Chin, 2014).

There are short and long-term effects of being exposed to chemical hazards at the workplace. These effects termed occupational diseases are explained as conditions with adversative health effects on workers who are exposed to chemical hazards in the working environment (WHO, 2002). According to the American Conference of Governmental Industrial Hygienists

(ACGIH) threshold limit value (TLV) (2002), and the Department of Environmental Health and Safety (2012), cited by Bhusnure et al. (2018), the acute effects are headaches, coughing, nausea, tearing eyes and rashes. While chronic reactions are illnesses such as asthma, damage to the nerves, cancer, and dermatitis.

### **Biological hazards**

Biological hazards also known as biohazards are virulent substances that cause acute or chronic illnesses or diseases to human beings or other living organisms (Rim & Lim, 2014; Safe Act Australia 2011; WHO, 2002). These infectious or biological agents according to Tsai and Salazar (2007), are transmitted through air, droplets or contact between individuals. As indicated by Safe Act Australia (2011) and Asumeng et al. (2015), biological hazards encompass pathogenic micro-organisms, fungi or moulds, spores, yeast, viruses, parasites, bacteria and insects, body fluids, plants and animals. With regards to food, these biological agents are the food-borne organisms comprising norovirus, salmonella and hepatitis A virus which are transmitted through improperly prepared or stored foods (Centers for Disease Control and Prevention, 2006; McDonald & Griffin, 1986, cited in Tsai & Salazar 2007).

Commonly, these hazards enter the body directly or through broken skin such as cuts and bruises (WHO, 2002). Coming into contact with these infective and parasitic agents serves as a mode of transmission through diseases such as brucellosis, leptospirosis, anthrax, hydatidosis, psittacosis, tetanus, encephalitis, fungal infection and schistosomiasis can occur (Andola, 2016). Such infective agents can exist in animals and animal products like tissue, eggs and milk. As such, workers operating in whole and processed food companies are likely to

encounter this hazard (Safe Act Australia 2011; WHO, 2002). Other types of workplaces where biological hazards can pose risk to their workers are service facilities like schools, and hospitals among others (Asumeng et al., 2015).

### **Ergonomic hazards**

In a workplace, there is a relationship existing between a worker and the working environment. Such a nexus termed ergonomics, indicating mechanical factors (Omoijiade, 2018), studies the connection between personnel, the equipment and tools, systems, the environment, products, and the workplace design for a regular productive activity (Fernandez & Marley, 1998; Mondal, 2012). That is to say, ergonomics is about the arrangement of a workplace and goods to suit the comfort of the workers (Bhatia & Singla, 2019).

Poor working conditions or heavy physical workload which involves engaging in manual tasks that are repetitive in nature are examples of ergonomics (Ametepoh, 2011). Such ergonomically poor working conditions can be linked to tremendously improperly designed tools, work areas or procedures (Tadesse & Admassu, 2006). These repetitive tasks and static muscular load are very common among the service occupation for that matter, the staff of a kitchen in both restaurants and hotels (Ametepoh, 2011).

Some of the daily tasks the kitchen staff performs are monotonous, continuous, and labour-intensive. These activities range from washing utensils/dishes, peeling foodstuffs, and lifting hot and heavy cooking equipment which involves bending the body. Others include overstretching to reach for utensils or ingredients from a height, standing for long hours in meal preparation as such assuming poor posture (Kilic & Selvi, 2009; Mondal, 2012; Bindu &



Reddy, 2016, Malik & Rather, 2017; Syed Ali et al., 2018). Thus, these chores in the kitchen are cumbersome and strenuous.

At the workstations, workers assume uncomfortable positions when working on higher surfaces. This affects specific body parts as the joints shift from their neutral positions while performing the task (Syed Ali et al., 2018). According to Syed Ali et al. (2018) when workers assume awkward postures, it necessitates prolong grasping of the hands, bending of the wrist, vibration and localized mechanical pressure. This then causes pain in the muscles as a result of weakness, and contraction leading to musculoskeletal disorders (WMSDs) in the upper extremity and back of the worker's bodies which brings about work disability and workplace absence (Oranye, Wallis, Roer, Archer-Heese, & Aguilar, 2016). These disorders involve irritable pain and discomfort in the hand, wrist, elbow, shoulder, neck and back of the body (Gangopadhyay et al., 2003; Mondal, 2012). Subsequently, the disorders could bring some traumatic and repetitive injuries to the kitchen staff. Some of the conditions associated with the ergonomic hazards are tendonitis, carpal tunnel syndrome and thermal strains. (Bindu & Reddy, 2016; Mondal, 2012; Ward, DeCastro, & Miller, 2010).

### **Psychosocial hazards**

The final type of hazard called psychosocial hazard focuses on psychological and social stressful factors (Omoijiade, 2018). It is defined as an

*interaction between and among work environment, job content, organizational conditions and workers' capacities, needs, culture, and personal extra-job considerations that may, through perceptions and*



*experience, influence health, work performance and job satisfaction* (ILO, 1986, p. 3 cited in ILO, 2016).

Alternatively, the psychosocial hazard is all about the work design or job characteristics of the social and environmental context which has the potential indication of causing psychosomatic and bodily harm (Cox & Griffiths 1995). The submission is that workplace psychosocial hazards involve the elements of a job environment, and social and imposing circumstances, that might result in mental or physical impairment. That is, the effect will be both within and outside a human body.

The biro or emphasis in both definitions circles around the dynamic interaction existing between the human factors and the workplace environment. These involve the existing social environment and conditions in the organization, as well as the needs and proficiencies of the workers (Kennedy, 2018). Explicitly, there should be a balance between the working conditions and the human factors. This will help prevent negative interactions that could bring about emotional disturbances, and behavioural problems to present the risks of mental or physical disorders (ILO, 2016).

Psychosocial hazards arise from multiple work shifts, home-work interference and the goal and culture of the organization (Kennedy, 2018). Others are violence in the form of bullying or harassment, physical violence, verbal abuse, demands for responsibility leading to overworking, or working under pressure to meet deadlines and irregular working hours (Ametepheh, 2011; ILO, 2016; Lovelock, 2019; Niedhammer, Lesuffleur, Labarthe, & Chastang, 2018).

These risk factors could trigger several consequences because such factors do not often match the worker's level of knowledge, and abilities to cope and function efficiently and effectively for productivity in an organization to promote its success (Kennedy, 2018). Workload, as well as long hours of work shifts carried out without any breaks mostly at night, results in psychosocial stress (Baum, 2013; Colligan & Rosa, 1990 cited by Costa, 2010).

An increased workload of personnel is one of the unique characteristics of the food service sectors of the hospitality industry to help meet customer satisfaction with quality services (Amran et al., 2019). This has resulted in the sector being regarded as the shaggiest and most unfavourable workstation that affects the physical and psychological well-being of employees in the industry (Ametepeh, 2011). That is, psychosocial hazards is seen to disrupt the internal balance between both social and interpersonal relationships in the workplace (Kennedy, 2018). For instance, psychosocial hazards create a ruckus between workers' psychological reactions to work and the working relationships with supervisors and colleagues at the workplace (Wilson, 2011). Health conditions relating to psychosocial hazards as mentioned by Lovelock, (2019) and the Organisation of Africa Trade Union Unity [OATUU] (2003) as cited by Ametepeh (2011), are actuate anxiety, burnout syndromes or fatigue, depression, sleep deprivation and stress.

All these various hazards are organized into two broad categories. These as identified by Bello (2012), are safety hazards and health hazards. Safety hazards are situations that cause instantaneous injuries to an employee. For example, a worker could immediately get burnt through a spill of hot oil on the body in the kitchen and these hazards comprise fire and explosion, machinery,

and electricity. The health hazards are related to long-time exposure to some substances such as excessive noise levels or vibration from machines resulting in hearing impairment or chemicals causing kidney or lung damage.

### **Theoretical Review**

The study was theoretically grounded in Heinrich's Domino Theory, Domino Sequence of Accident Causative Theory and a model for health and well-being in the workplace. These have been put forward to explain the causes of occupational hazards, consequential factors of workplace hazards and responsibilities among the employers and employees with the predicting factors involved in helping to ensure occupational safety and health in the kitchens of a restaurant in this study.

#### **Domino Theory**

The Domino Theory (Figure 1) was propounded by Heinrich (1931). It is one of the earliest scientific theories employed in explaining the occurrence of accidents at a workplace. The aim of this theory focuses on establishing a linear cause-effect relationship among various social and individual factors using dominoes (Awal & Hasegawa, 2017). The theory proposes that an accident occurs through a chain of series of events. According to Heinrich (1931), the occurrence of an accident is chronologically likened to a row of dominoes knocking each other down in succession. That is, when the dominos fall over, each tip triggers the next domino to push the next over. This process continues until all the entire connected dominos have fallen to result in an accident and subsequently causing an injury.

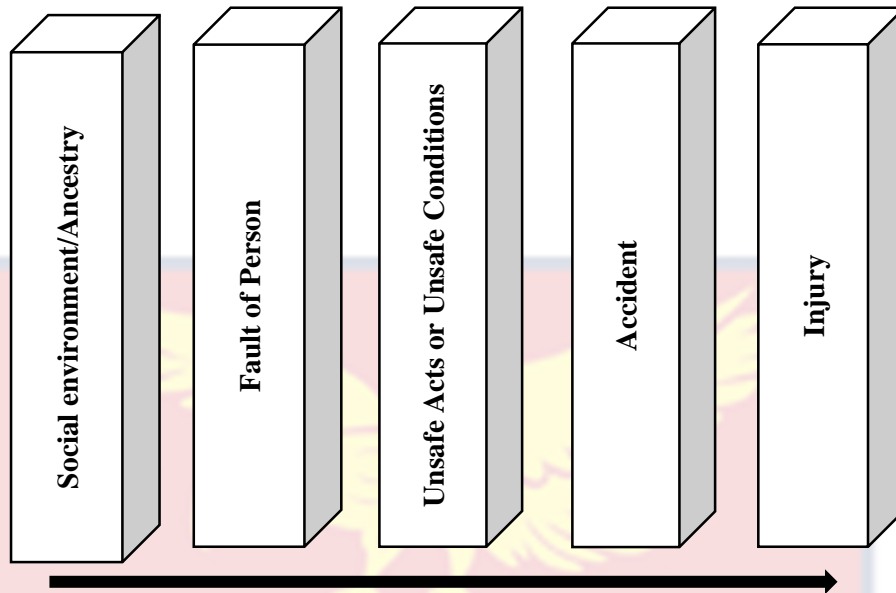


Figure 1: Domino Theory

Heinrich (1931)

The stages of the accident causations are labelled on five figurative dominoes in a sequence as suggested by Heinrich (1931). These stages are social environment and ancestry, fault of a person, unsafe act or unsafe condition, accidents and injuries. The first stage, otherwise termed as social environment and ancestry, relates to personality trait. This according to Heinrich (1931), is either acquired from the environment or inherent. The ancestries are also termed as inherited behaviours.

Such undesirable characteristics as stubbornness, greed, excitability and recklessness are considered to be inherited while, knowledge of customs and skills, as well as ignorance of safe practices and inconsiderateness, are acquired (Stukus, 2017; Wang & Griffis, 2018). In relating these to workers in the kitchen, for instance, a staff will avoid using PPEs when an individual sees other staff do the same. On the other hand, if a chef is also observed cutting foodstuffs on the fingers and not on the chopping board, other workers may also be found carrying out the same unsafe practice and it may linger on and become a custom.



When knowledge and capability needed to perform a task accurately are lacking in an environment, the condition will then lead to the fault of a person which is the next stage of the dominoes. This social environment and ancestry stage constitute entirely everything that may bring about undesirable traits in people.

The fault of a person as the second stage of the theory is the causation effect of an unpleasant innate or acquired features of a person's personality trait. Described differently, the fault of a person shows the negative qualities of one's temperament (Wang & Griffis, 2018). This domino refers to the individual characteristics serving as a conductive element to the occurrence of accidents (DeCamp & Herskovitz, 2015). These unwanted characteristics or manners comprise carelessness, inconsiderateness, bad temper and ignorance among others, and serve as the proximate reasons for committing an unsafe act. For example, a bad temper of a worker which is a psychosocial hazard can lead to spontaneous acts which signify the manifestation of disrespect for workplace safety. That is, a bad temper of a person can result in abuse or violence in the workplace. In addition, ignorance of workplace safety regulations or standard operating procedures is a very significant attribute to crafting unsafe actions that could result in accidents. This stage, if left uncontrolled or corrected will stimulate the succeeding step titled the unsafe acts and unsafe conditions.

The third stage, unsafe acts and unsafe conditions, is the observable factor acknowledged as the genesis of a specific incident (DeCamp & Herskovitz, 2015). These are the mechanical or physical conditions (ergonomic and physical hazards respectively) labelled on the domino as the centre of the sequences contributing to an accident (Wang & Griffis, 2018). This domino comprising of the errors and technical failures of a workplace is the most



significant factor causing an accident. Examples of such unsafe acts and conditions involve operating a machine without taking appropriate caution or failing to use the appropriate protective equipment in the line of duty. Others include a staff working with no authority on the job, improperly placing or stacking materials in dangerous places, incorrectly using tools and equipment and lack of concentration while working (Aksorn & Hadikusumo, 2007).

Accident as the next stage of the domino theory is undesirable and unwanted events that lead to injury when they occur. Generally, an accident is described as a dynamic, spontaneous and uncontrolled occurrence that is stimulated through an existence of a hazard that mostly occurs through several events which are interconnected to each other; thus, resulting in losses (Friend & Koh, 2018; Heinrich et al., 1980 cited in Zakaria, Mansor, & Abdullah, 2012). This simply means that the occurrence of an accident is unpremeditated as it happens without any signal or alert. In the workplace, such events are considered irregular events, as they arise through activities that are carried out in the workplace and result in worker injuries (Baselga, 1984 cited in Saldaña, Herrero, Campo, & Ritzel, 2003) and damages to materials and equipment. The last stage of the Heinrich domino theory entitled injuries is the consequences of the accidents. It is the damage to the body which causes pain to the worker.

From the foregoing, the domino theory is argued on the basis that ancestry and social environment factors contribute to the fault of a person which also incites an unsafe act and/or mechanical or physical hazards which brings about an accident and finally an Injury (Dhanabal, Karuppiah, Mani, Rasdi, & Sambasivam, 2016). These natural or environmental flaws coming from a

worker's family or life cause secondary personal defects, which are themselves contributors to unsafe acts or the existence of hazardous conditions.

This theory focuses more on a person initiating the unsafe act to cause an accident. Heinrich established the fact that an unsafe act causes 88% of industrial accident, 10% of the accidents is attributed to unsafe conditions, with the remaining 2% being attributed to natural occurrences or natural disasters which are linked to the act of God (Hosseinian & Torghabeh, 2012). That is, the unsafe act is considered a hazard in the loss of sequence or accident. Thus, to inhibit the occurrence of losses such as casualties, property losses, illnesses and environmental distractions (Yuebing, Kai, & Ruming, 2011), there is a need to eliminate the unsafe act (Holmgren, 2006).

Understanding why dangerous acts are committed by individuals, Heinrich is said to attribute it to four reasons which are improper attitude, lack of knowledge or skill, physical unsuitability and improper mechanical or physical environment (Awal & Hasegawa, 2017). These were later segmented into 'direct' and 'underlying' causes and the conclusion dwells on the fact that combining multiple causes creates a systematic chain of events that leads to the accident. However, the accident can be prevented if there is a disruption or toppling in the series of events forming the sequential chain. That is, if one domino is eliminated, then the entire process ceases (Hosseinian & Torghabeh, 2012). For instance, when the unsafe act or condition is debarred or removed from the chain of reaction, then the accidents and the resultant injuries would not occur.

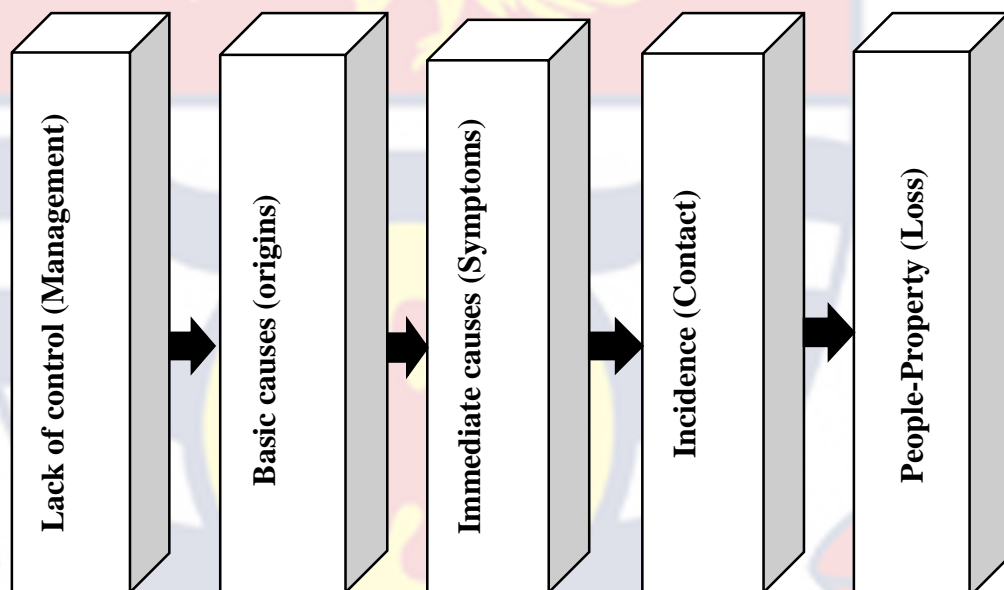
The theory is considered applicable to inform the conceptual structuring of this study because it helps to indicate the existence of hazards in the kitchen and workers' contribution to the cause or prevention of accidents that lead to injuries, which is one of the effects of hazards the study will look at. However, social environment and ancestry domino accident domino will be omitted because these fall outside the focus of this study.

Despite this theory has been the basic ground on which numerous researches have been built, it is not without limitations. The criticism of this theory is that it concentrated on the belief of a single cause, even though, there may be more than one drive. Precisely, the theory focused tremendously on personnel, while disregarding the fault of the organization, even though, the actions of the management or the organization can also account for the presence of hazards in the workplace. The domino theory was blamed for the process of simplifying human behaviour control in accidents (Hosseinian & Torghabeh, 2012; Sabet, Aadal, Jamshidi, & Rad, 2013). Another condemnation given about this domino theory is on the basis that, it did not consider other precautionary measures to help avoid accidents except the removal of a factor from the linear event chain (Stukus, 2017). Based on the limitations of this theory and the focus of this study; the theory will be adapted to incorporate the missing constructs.

### **Domino Sequence of Accident Causative Theory**

The Domino Sequence of Accident Causative Theory was introduced by Bird and Loftus (1976), as a modification to the novel Heinrich Domino theory. The new version was developed after forty years of the publication of the original model (Stukus, 2017). The theory as indicated in Figure 2, substituted

the ancestry and social environmental factors which were considered as the initial sequential predictors of an unsafe act or unsafe conditions in the chain of factors activating the occurrence of an accident with lack of management control (Oppong, 2011). The model was updated to incorporate the role of management systems or management relationships associated with the sequence of accidents causes and effects of incidents (Friend & Kohn, 2018; Wang & Griffis, 2018).



*Figure 2: Domino Sequence of Accident Causative Theory*  
Bird and Loftus (1976)

Bird and Loftus consider management as the key component accountable for causing an accident (Hosseinian & Torghabeh, 2012) in an organization. The theory recognizes people, material, equipment and environment as components that will individually or collectively cause an accident in an organization (Wang & Griffis, 2018). Just like the Heinrich Domino Theory, the updated domino sequence of accident causative theory uses



a series of five dominos to explain factors leading to the occurrence of an accident leading to grave consequences. Such factors include lack of control or management, basic causes or origins, immediate causes or symptoms, incidence and loss.

With a lack of control/management as the first stage, the control in this regard reflects the management functions which involve planning, organizing, leading and control (Friend & Kohn, 2018). The absence of these functions in an organization will expedite the occurrence of an accident. Instances of activities depicting lack of control or management include inadequate programme control or programme knowledge, inadequate standard control and knowledge of programme standards. The third activity is failure to perform to standard or organizations failing to manage employees to comply with standards (Holmgren, 2006; Wang & Griffis, 2018). Explicitly, purchasing poor quality equipment or tools, giving inadequate training or failing to install adequate engineering controls are examples of such activities of this domino that will initiate the second stage of the domino called the basic causes (Gabriel, Nwaeke, & Amah, 2019).

These basic causes or origin stage is aimed at clarifying why people engage in substandard activities and the existence of unsafe conditions. The stage rationalizes how substandard acts and conditions spring up and how the failure to identify these root causes leads to losses (Bird & Loftus, 1976). According to Othman, Majid, Mohamad, Shafiq and Napia (2018), these basic causes constitute factors like lack of motivation to work safely or uncorrected hazards which are within management control.



The domino is made up of two groups of factors, namely; personal factors and job factors. The personal factors embrace features such as lack of knowledge or skill, improper motivation together with physical and psychological obstructions to performance (Friend & Kohn, 2018). The factors are also related to the worker's illness, bad attitude and inability to carry out a standard act (Sabet et al., 2013). The job factors are inadequate work standards, inadequate purchasing standards, insufficient design and maintenance, flaccid equipment, and inappropriate usage of tools as in the case of lifting more weight than the rated capacity. (Friend & Kohn, 2018; Sabet et al., 2013; Stukus, 2017). Once these causes exist in a company, according to Bird and Loftus, it will give room for the occurrence of error which is described as substandard practice in the business area. Failure to control these causes will prompt the next domino to fall and this will start further sequences of reaction. As alluded to by Friend and Kohn (2018), these outcomes justify why workers engage in unacceptable or inappropriate practices.

The next domino termed immediate causes/symptoms is identified as the stage where the primary symptoms of incidences such as substandard acts and conditions exist. It is an unsafe act or what is characterized as a violation of standard safe practice which could permit the occurrence of an accident (Holmgren, 2006). These errors are seen as only symptoms resulting from basic causes (Stukus, 2017). The inference is that, without the existence of basic causes of incidence, there would not be any opportunity for unsafe practices and conditions to be carried out to lower the operation of a business. In this regard, there will not be losses as well. Per se, these causes will be identified and evaded

when appropriate measures are established to stop the happening of an incident, which is the fourth stage.

According to Bird and Loftus (1976), an incident is an undesired event that brings about losses through the indulgence of unsafe practices and the presence of unsafe conditions. The authors consider the event undesirable because of the difficulty to predict its outcome as its occurrence is often a matter of chance. An incident is identified as the contact stage, where there is contact with energy or a substance (Othman et al., 2018). Such energy sources are mentioned as chemical, kinetic, electrical, thermal, ionizing and non-ionizing radiation among others. Naturally, the degree of contact with this energy source can be considered severe when it goes beyond the threshold or maximum limit of what the body or structure can endure (Bird & Loftus, 1976).

There are different categories of contact incidents. As listed by Gabriel et al. (2019), these come in the form of stuck-by, stuck-against, contact-by, contact-with, caught-in, caught-on, and caught-between, foot-level-fall, fall-to-below, overexertion and expose. This leads to the stage or the last domino where people could be harmed and properties also get destroyed. Not all incidents automatically cause a loss. According to Stukus (2017), this affirmation is evident in Bird and Loftus's study in 1969 which indicated a 1- 10 - 30 - 600 ratio. The interpretation is that, for every one reported accident resulting in incapacitating injury, there had been ten such events causing merely minor injuries, 30 of which have damage properties and 600 reported incidents have been without any visible injury or damage.

The fifth domino also called the loss, is the stage that focuses on the adverse outcome of an accident on properties, people and processes. Bird and Loftus believe that, once an accident has transpired in an organization, there will be a loss and this outcome according to Bird and Germain (1996), cited in Holmgren (2006), can be measured as minor, serious, major or catastrophic depending on the consequence. These losses are weighed in the form of physical harm or injury caused to the working personnel in addition to the property and environmental damages (Friend & Kohn, 2018). The assumption behind this theory is that this final stage can be prevented or minimized if appropriate measures to control the contact stage that initiates these destruction circumstances are introduced and executed.

In a nutshell, the focal point of the domino sequence of accident causative theory is the role of management as a primary agent in causing or preventing the existence of hazards leading to accidents in the workplace such as the kitchen. This is very important to this study because it helps to understand the point that, when the management of a hotel and restaurant business fails to fulfil its obligation of complying with the occupational safety and health regulations which is to provide and ensure the implementation of the appropriate safety measures, it will incite consequences that will compromise the safety and health of the staff. Otherwise, if management plays its role of planning, organizing, leading and controlling well, in instituting the required safety and health measures, it will create a conducive working environment devoid of hazards and accidents that lead to harm or destruction in the work environment. Since this affirmation reflects some aspect of the intention of this study which looks at the role of management involvement in

controlling and preventing the existence of hazards in restaurants kitchens, the lack of control/management is the domino deemed relevant to suit the study because the other domino has already been considered from the domino theory.

### **Framework for Health and Well-Being in the Workplace**

Danna and Griffin (1999), developed the framework for health and well-being in the workplace as a guide to rationalizing the need to ensure a healthy working environment as an ethical principle or moral philosophy to promote health and well-being. The framework (Figure 3) underlined key elements of the health and well-being of employees in the workplace and its consequences. Danna and Griffin (1999), are of the assertion that the health and well-being of an employee at a workplace are influenced by some antecedent factors which could have effects on workers and the organizations. These factors are work setting, personality traits and occupational stress.

From the framework, Danna and Griffin (1999), considered health as a sub-component of well-being, which is a broad concept with other constructs in the workplace. Well-being encompasses various concepts such as life or non-work satisfaction, work or job-related satisfaction and general health. In explaining the life or non-work satisfactions enjoyed by the individual, this construct was viewed in line with a worker's satisfaction and/or dissatisfaction with social life, family life, recreation, and spirituality, among others. The work or job-related satisfaction constituted issues such as workers' satisfaction and/or dissatisfaction with pay, promotion opportunities, the job itself, co-workers and so on. The health component involves mental/psychological and physical/physiological issues. Indicators of mental/psychological problems are



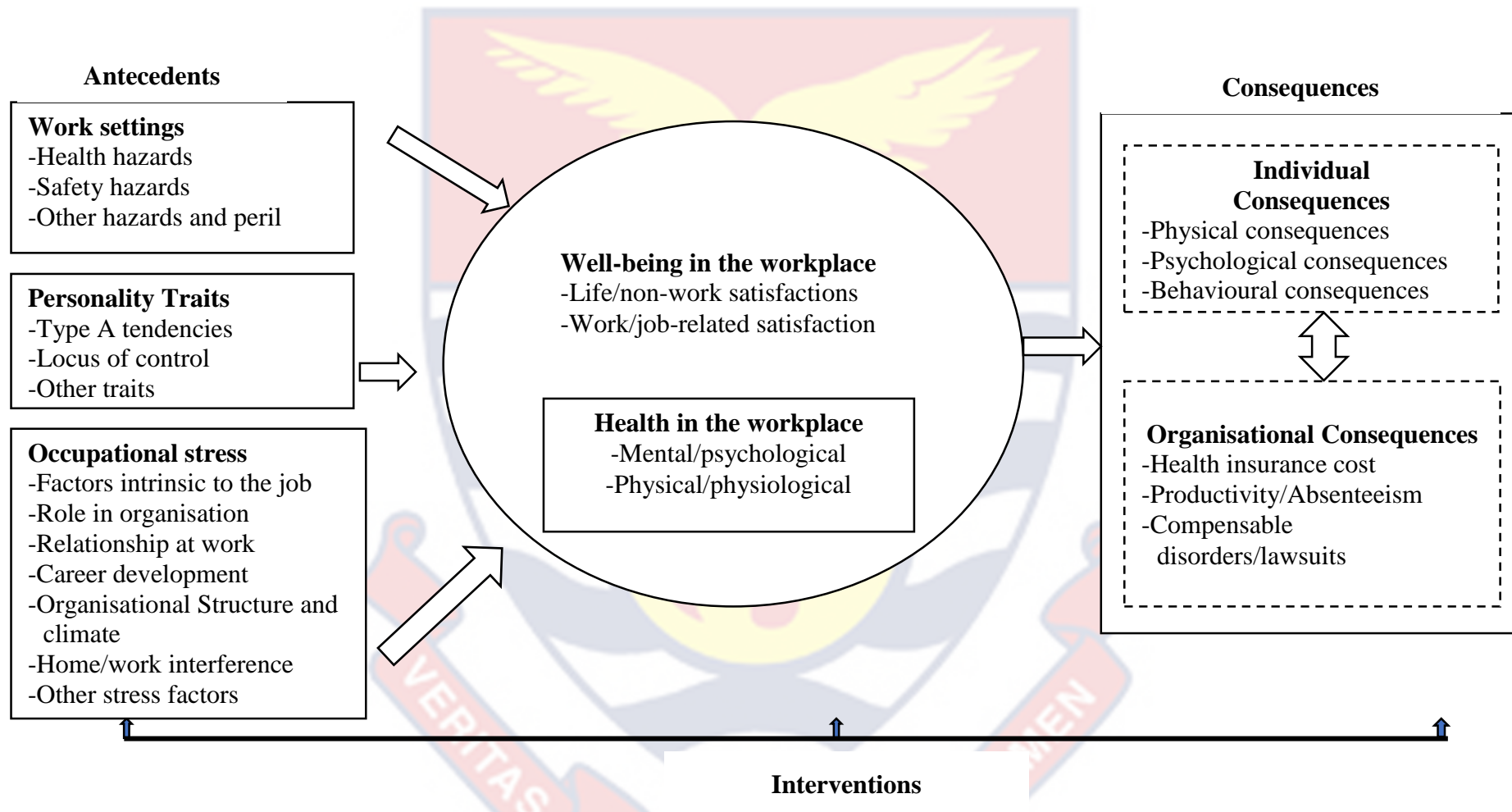


Figure 3: Framework for Health and Well-Being in the Workplace

Danna and Griffin (1999)



frustration and anxiety, whereas physical/physiological effects are about general physical health and specific health conditions like blood pressure and heart conditions.

The indication from the framework is that the matters of health and well-being of personnel do not just occur by nature but, are generated by the antecedent factors. The work setting is aligned with health and safety hazards and other hazards and dangers. These according to Danna and Griffin (1999), render the working environment precarious with a subsequent effect on the well-being and health of the workers in these work settings. The other side of the coin from the authors signifies that, when these hazardous elements are absent in the workplace, the situation, will positively influence the workers' health and well-being.

Type A behaviour tendencies, locus of control and other traits are attributes associated with the personality trait. The roles played by these attributes are to establish the degree to which a worker will demonstrate a high or low level of health and well-being in an organization. Another antecedent factor that can directly have an impact on the health and well-being of an organization as shown in the framework is the stress experienced by workers. Literature has shown that occupational stress causes behavioural, medical and psychological problems (Burton, 2010).

Finally, Danna and Griffin (1999), identified two interrelated sets of consequences for health and well-being in the workplace. These consequences are grouped into individual and organizational consequences. The individual consequences comprise physical, psychological and behavioural consequences. Examples of the individual behavioural effects are alcohol and drug abuse,

accident proneness, violence and augmented smoking of cigarettes, overeating, and lack of exercise (Burton, 2010; Quick, Horn, & Quick, 1989).

The psychological effects of the individual consequences are itemized as depression, anxiety, burnout, sleep disturbance, sexual dysfunction and impaired mood (Baba, Jamal, & Tourigny, 1998; Leka, Griffiths, & Cox, 2003). The physical consequences of the individual consequences entail injuries and ailments such as musculoskeletal injuries, upper respiratory infections, and hypertension (Burton, 2010).

Regarding the organizational consequences, Danna and Griffin (1999), believe that factors that impact the health and well-being of workforces in an organization can significantly influence the organization's finances and profit. This can result from the direct or indirect financial costs and maladaptive behaviours demonstrated by the employees in the organization. These organizational consequences encompass the cost of health insurance, productivity and absenteeism, and compensable disorders/lawsuits.

Lastly, Danna and Griffin (1999), considered the impact of an intervention on the antecedent factors, the health and well-being of employees and consequential factors. The intervention at the individual or organizational level is to improve the safety and working conditions in the workplace, assuage occupational stressors and recuperate the employees' coping mechanisms with the stressors. According to Danna and Griffin (1999), this is intended to improve the workers' health and well-being and subsequently affect individuals and organizations.

Given the direction of this study, the framework for organizing and directing future theory, research, and practice regarding health and well-being in the workplace is considered relevant for the study but will be adapted. This is because the employee's well-being and health in the workplace and the other antecedent factors (personality traits and occupational stress) incorporated as other constructs in the framework, fall outside the scope of this study, and hence will not be considered. However, components such as work setting and the consequential factors will provide a good ground for the assessment of the effects and cost of kitchen hazards on staff and the restaurant and hotel business. In addition, the framework did not specify the measures to be instated to ensure occupational safety and health in the workplace and the reason to comply with the measures. Base on this drawback the framework will be adapted based on these to underscore the study.

### **Conceptual Framework**

This model was developed by reviewing the existing theories put forward to explain occupational safety and health in workplaces by Henrich's domino theory, Bird and Loftus's domino sequence of accident causative theory and the framework for health and well-being in the workplace. Given the scope of the study, incorporating the perspectives of different authors (Bird & Loftus, 1976; Danna & Griffin, 1999; Heinrich, 1931) is considered a more realistic way of assessing the occupational safety and health of kitchen staff of hotels and restaurants.

The model (Figure 4) looks at kitchen staff and hotels and restaurants' involvement in helping to control and prevent hazards from causing harm in the kitchen. This is in order to ensure occupational safety and health. As stipulated

by Henrich's domino theory and Bird and Loftus domino sequence of accident causative theory, the grounds for the existence of hazards resulting in accidents



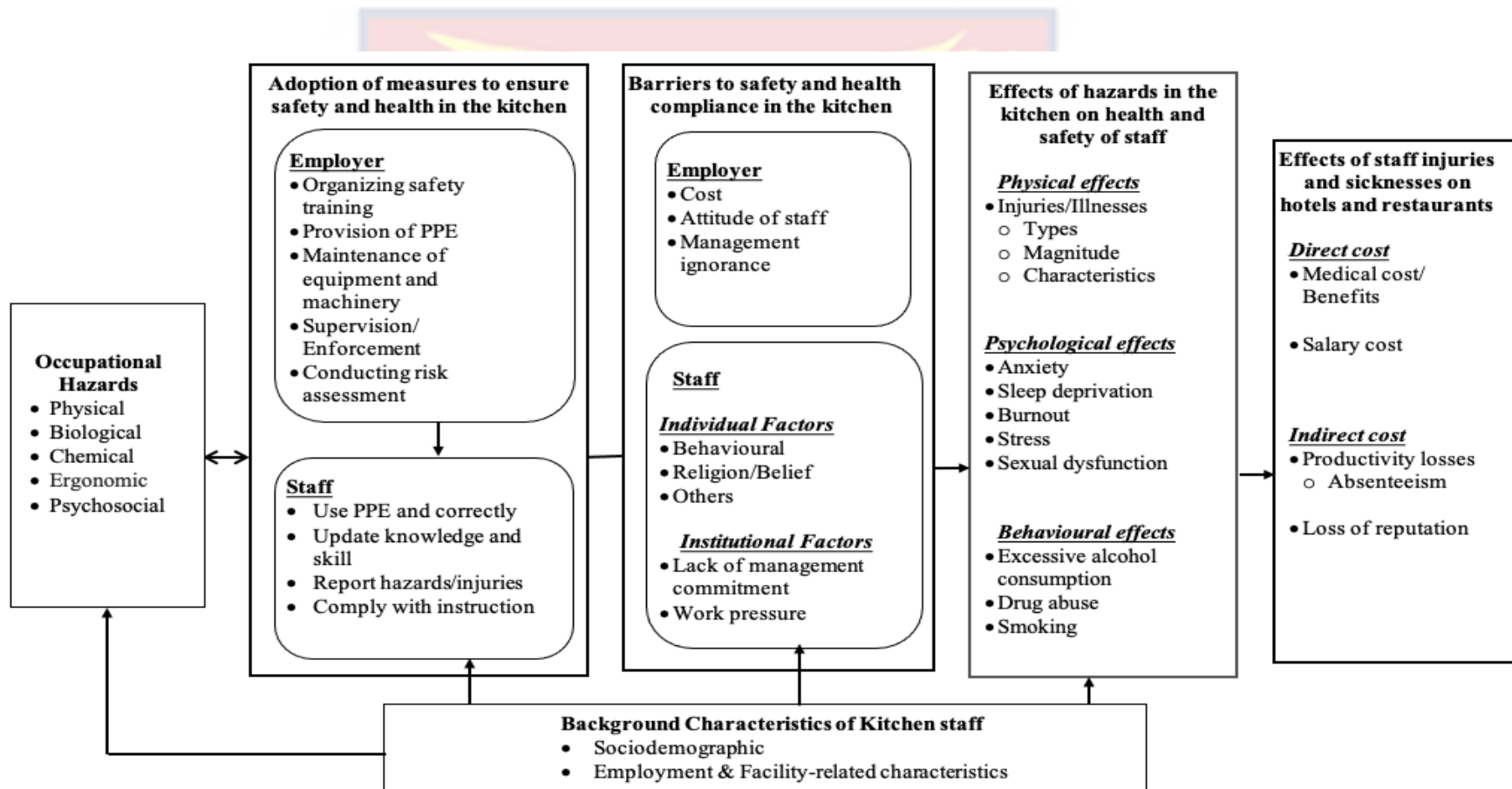


Figure 4: Conceptual Framework for the Study

Source: Adapted from (Bird & Loftus, 1976; Danna, & Griffin, 1999; Heinrich, 1931.)



suggests that guaranteeing safety and health in the kitchens of the hotels and independent restaurants lies in the constructive practices of the staff and management of these facilities.

The study focuses on the existence of hazards or natural occurrences in the kitchens of both hotels and restaurants in the hospitality industry. These hazards are classified as physical, chemical, biological, ergonomic and psychosocial hazards. The existence of these hazards informs the implementation of safety measures to help curtail or control these hazards from causing harm to the staff and subsequently, the hotels and restaurants. These measures are viewed as a two- way affair. That is, the measures implemented by the organization and the measures carried out by the staff as stipulated in the Factories, Offices and Shops Act, 1970, Act 328; the Ghana Labour Act, Act 651 and the ILO guidelines on occupation safety and health management (ILO, 2009).

The measures carried out by the restaurants and hotels which are labelled or termed organizational duties, encompass the provision of PPE, supervision, organization of safety training for the workers or updating staff knowledge on matters concerning occupational safety and health, maintaining equipment and machinery among others. On the other hand, the measures, marked as staff duties are the undertakings of staff to ensure their safety and health in the restaurant kitchens. Such measures include using and correctly using PPE, updating knowledge and skills, reporting hazards or injuries, complying with instructions, and following safety and health procedures as required by law. Management instituting such measures and staff fulfilling their part by carrying out the measures connotes that both hotels and restaurants and the kitchen staff

to cause harm are connected to the negative activities of an individual (kitchen staff) or management of hotels and restaurants respectively. This otherwise are complying with the mandated safety and health measures stipulated by law, which is to help control and prevent hazards in the kitchen. Otherwise, it connotes non-compliance with the safety and health measures required of the facilities and staff.

It is also expected that these duties when carried out effectively by both management and restaurant kitchen staff without any drawbacks, the risk of hazards which will lead to the occurrence of injuries and ailments among the staff in the course of discharging their duties will be prevented or reduced. This will then have an overall effect on the organization in terms of non-payment of medical bills or compensation, overtime allowances, reducing productivity loss and building a positive image of the facility.

It is also expected that both the staff and the hotels and independent restaurants' compliance with the safety and health measures as a requirement, might be hindered by some barriers. These barriers are circumnavigated around two themes: individual and institutional barriers. The institutional barriers constitute variables such as behavioural issues, beliefs and others. The second theme of barriers (institutional barriers) comprises factors like, lack of management commitment and work pressure.

As these factors hinder the staff and management's non-compliance with the safety and health measures in the restaurants and hotels, it creates room for the hazards to result in work-related consequences for the kitchen staff. Such effects connected to the kitchen staff are grouped into physical, psychological, and behavioural effects. The physical effects comprise injuries (musculoskeletal

injuries, cuts, burns, and so on) and illnesses (hypertension, stomach ulcer, cancer, cardiovascular disease among others). Depression, stress, burn out and sleep deprivation are some of the conditions that fall under the psychological effects. The behavioural effects encompass practices such as excessive alcohol consumption, drug abuse and smoking, among others.

These consequences suffered by the staff as a result of the hazards they encounter in the restaurants have an impact on the restaurants and hotels in one way or the other. Some of the impacts of the adverse outcome of the hazards faced by the kitchen staff (injuries and illnesses) on the restaurants and hotels are the cost involved in paying medical bills, productivity losses, loss of reputation, cost of paying overtime allowances, and so on.

The conclusion is that, if kitchen staff and management of the hotels and restaurants effectively adhere to the recommended safety and health measures, it will prevent or control the existing hazards in the restaurant kitchens from resulting in staff injuries and illnesses which will later affect the facilities.

### **Summary**

The chapter reviewed concepts and theories relating to occupational safety and health. From the theoretical perspective, Henrich's Domino Theory, Bird and Loftus's Domino Sequence of Accident Causative Theory and the Framework for Health and Well-being in the Workplace were reviewed as the foundational theories of this study. The chapter ended with a discussion on the conceptual framework underpinning the study. The next chapter reviews the extant empirical literature on occupational safety and health.

## CHAPTER THREE

### EMPIRICAL REVIEW ON OCCUPATIONAL SAFETY AND HEALTH

#### Introduction

This chapter presents a review of empirical literature on occupational safety and health in general and restaurant kitchens in particular. Specifically, the chapter focuses on the types of workplace hazards existing in food and beverage and accommodation establishments, the occupational safety and health measures instituted in work environments and the barriers to compliance with occupational safety and health measures. The review further looks at the effects of hazards on the safety and health of staff, and the effects of injuries and illnesses/diseases of staff on organizations.

#### Safety and Health Hazards in Food and Beverage and Accommodation

##### Establishments

A kitchen within the hospitality industry like any other workplace is associated with one risk or the other (Bhagawati, 2015). Occupational hazards encompass various workplace factors which have the potential of causing risk or harm. These factors comprise of points, areas, materials, activities or circumstances prevalent within a working environment like the kitchen (Bello, 2012). In dealing with occupational safety and health in restaurants and hotels, Tak (2016), considers it crucial to identify the potential hazards which range from the materials, equipment, chemicals and work activities. Identifying these potential hazards has received some consideration over the years in several studies in various food production areas in general and not much in restaurant kitchens (Bindu & Reddy, 2016; Bloisi, 2012; Maseko, 2016; Paes, et al., 2020;



Qiang & Chow, 2007; Rajini et al., 2012; Syed Ali et. al., 2018; Tsai & Salazar, 2007).

### **Physical hazards**

Reporting on conditions and acts constituting physical hazards as a type of hazards, a study carried out by Tsai, and Salazar (2007), has established that extreme temperatures (hot and cold), as well as slippery floors and broken glass of dishware were the primary physical hazards, immigrant restaurant workers encountered in the United States. Similarly, a study conducted to assess occupational risks in commercial restaurants in Brazil (Paes, et al., 2020) also revealed that heat or high temperature, poor lighting and loud noise were the most hazardous factors confronting the commercial restaurant workers.

In contrast, a study conducted by Maseko (2016), among food and beverage workers in some selected provinces in South Africa did not highlight extreme temperatures, and insufficient lighting as major hazardous conditions in the workplaces but, slippery floors. A further study concentrating on hotels in Eldoret in Kenya discovered through observation that, just 10% of the hotels were without adequate lighting and good ventilation (Cherono, 2011).

Additionally, the findings from another study conducted among cooks of commercial kitchens of restaurants, catering and fast-food establishments in and around Hyderabad city of Telangana State in 2013, identified different elements such as poor electrical wiring of electrical equipment and loose contacts of electrical cords to plugs as the physical hazards found in the kitchens of the various commercial catering facilities in India (Bindu & Reddy, 2016). The authors again found heat and sharp edges of cooking appliances and food



containers as other physical hazardous conditions encountered by the cooks in the commercial kitchens.

### **Chemical hazards**

With regard to chemical hazards prevailing in food production areas, outcomes of studies had shown that there are different forms of these hazards dominating the food production units of the various hospitality facilities. For instance, while Rajini et al. (2012), identified fumes and vapour as the main chemical hazards existing in hotel kitchens in Sri Lanka, Qiang and Chow, (2007), found leakages of gases, dust or soot as the main chemical issues observed in catering industries in China. In a similar study in the U.S. among immigrant workers in restaurant kitchens, Tsai & Salazar (2007), observed gases and cooking fumes as the hazards. In addition, these researchers found bleaches used for soaking kitchen cloths and cleaning surfaces like floors, stoves and working surfaces were the most hazardous chemicals the staff were exposed to in the kitchens.

### **Ergonomic hazards**

Various forms of ergonomic hazards have been identified in studies conducted in food service sectors of the hospitality industry in both developed and developing countries. These forms of hazards are comprised of poor working conditions or heavy physical workload which involved engaging in manual tasks that are repetitive in nature. One of such studies conducted among restaurants, catering and fast-food establishments in Hyderabad city of Telangana State in India, Bindu and Reddy (2016) cited lifting heavy objects and equipment as the ergonomic practice carried out among the various kitchen staff of these facilities. This finding corresponds with a study conducted earlier

in the United States in 2009, where the lifting of heavy objects and equipment was prevalent among restaurant workers (Tsai, 2009).

Comparably, a study conducted in a hotel by Tak (2016), also quoted lifting heavy loads as an ergonomic hazardous practice that causes injuries among staff in the kitchen department of Sarova Staley hotel in Nairobi. This practice was cited in addition to constant bending and standing for long hours. Hitherto in Rajini et al. (2012), research carried out within hotel kitchens in Sri Lanka in Asia, otherwise, identified the use of improperly designed work tools and poor layout or arrangement of the kitchen as the ergonomic hazardous conditions confronting the staff working in these kitchens.

In other studies, by Syed Ali et al. (2018), and Kamat et al. (2017), repetitively working in extremely awkward postures for a prolonged working hour, were the ergonomic acts identified among food production staff in Kristal restaurant in Polytechnic of Merlimau Malacca and Universiti Teknikal Malaysia Melaka (UTeM) cafeteria kitchen. Even though, both studies were carried out in Malaysia and also on academic campuses, they involved restaurant kitchens.

### **Psychosocial hazards**

In a study conducted by Bloisi (2012), in the United Kingdom, negative acts such as insults, being shouted at, physical abuse, demands for responsibility or working under pressure, carrying out unmanageable workload and bullying were found as the forms of psychosocial hazards, commercial kitchen chefs faced in the discharge of their duties. Tak's (2016) study carried out within Sarova Stanley hotel kitchen in Nairobi, similarly itemized excessive workload, in addition to working with limited time to complete tasks, working during

unsocial hours, having conflict with supervisors or co-workers, working without break or rest and overtime working as the psychosocial hazardous situations staff encounter at work.

With regards to the duration in terms of how often a respondent had been exposed to a particular type of hazard, the literature has reported just on the psychosocial hazard. Such a study conducted by Bloisi (2012), indicates that the situation of being shouted at, physical abuse and handling an unmanageable workload were the hazardous practices experienced by permanent chefs (10.2%, 15.8%, and 13.2%) of commercial kitchens in the United Kingdom respectively every month. The conditions were also experienced weekly by 9.9%, 8.2% and 8.6% of the chefs respectively. The percentages of chefs who were exposed to these negative acts daily are respectively cited as follows; 4.9%, 4.3%, and 4.9%.

Empirically, there have been documented cases to examine the various types of hazards and the categorization of the most prevalent in the hotel and restaurant kitchens in different parts of the world (Abubakar, 2017; Tak, 2016; Tiwari, 2015; Tsai & Salazar, 2007). Specifically, in a hotel, Abubakar (2017), identified five types of hazards prevailing in the hotels in Kaduna Metropolis in Nigeria and the most prevalent one emphasized in the study is the ergonomic hazard. This is followed by chemical, biological, physical, and psychological hazards in that order. Related research conducted in Sarova Stanley hotel early (2016) in Nairobi (Africa), on the other hand, also discovered the presence of various types of hazards in the kitchen department. However, almost each of the hazards was equally represented in terms of predominance in the kitchen. (Tak, 2016),

A related study involving restaurants by Tsai and Salazar (2007) revealed that all the various types of hazards except biological hazards existed within these restaurants in the United States. Among these, psychosocial hazard was the type of occupational hazard spotted as the most threatening hazard encountered by Chinese immigrant workers in the restaurant. A similar study conducted between restaurant and dhaba (roadside restaurant) workers, on the contrary, saw that physical and chemical hazards were the leading hazards among the five categories of hazards present in restaurants in India (Tiwari, 2015).

On matters of occupational safety and health, examining the background characteristics of employees in regard to their exposure to occupational hazards are important. In reviewing studies on occupational hazards in workplaces including the food industry, Biswas, Harbin, Irvin, Johnston, Begum, Tiong, Apedaile, Koehoorn and Smith (2021), indicated that male employees are more exposed to physical and chemical hazards in workplaces than female personnel.

In a study carried out among workers in Chile, Vives, Gray, González and Molina's (2018), revealed that male employees were more exposed to ergonomic and psychosocial hazards in workplaces than female staff. Workers' exposure to both psychosocial hazards and ergonomic hazards in workplaces was noted to decrease with age in both men and women. On the contrary, a study conducted by Park, Kim and Han (2018) on work sectors with high risk for work-related musculoskeletal disorder among Korean men and women, indicated that female staff working in hotels and restaurants were noted to have encountered more ergonomic hazards than the male staff.



## **Measures to Ensure Occupational Safety and Health**

Accidents occur when there is an existence of a danger (hazard) in the working environment (Alli, 2008). The occurrence of accidents in the working environment (kitchen) reflects the possibility of the absence of safety and health measures in an organization such as a restaurant or a hotel. Accordingly, to ensure occupational safety and health in a restaurant or a hotel, there is a need to institute and comply with safety and health measures that would help avert or decrease the hazards causing accidents. These measures termed safety measures, are described as acceptable actions taken consciously to protect, maintain and promote workers' safety, health and well-being in and outside the working environment by management (Ansah, 2015). The effectiveness of occupational safety and health depends on how successfully both employees and employers carry out their responsibilities (Cudjoe, 2011). According to Dollard et al. (2012) as cited by Ansah (2015), instituting safety measures in restaurants and hotels also shows management's commitment to the safety and health of its workers.

### **Measures Employed by Management to Ensure Safety and Health in the Workplace**

In assessing employers' compliance to occupational safety and health measures in food industries, Maseko (2016), studied food and beverage workers in South Africa. In the study, the researcher revealed that good housekeeping as a measure to prevent injuries and illnesses in the working environment was poorly managed in the sector. Contradictorily, Rajini et al. (2012), identified the maintenance of good housekeeping as the key safety and health measure carried out by 95% of the hotel industries in Sri Lanka. This was together with



practicing equipment schedules and emergency procedures. However, from the results of the findings, the conduct of risk assessment (30%), appointing a safety committee (20%), maintaining health and safety management systems (10%) and evaluation procedures for hazards (10%) were given little priority.

In a related study conducted on hotels in Eldoret in Kenya, Cherono (2011) found out that the establishment of safety committees (15.0%), was also not a common safety and health practice among the hotels. This was in addition to the unavailability of a register or accident books (26%).

However, the research found that 63% of the hotels engaged in regular risk assessment audits.

On the issues of provision of training which serves as a basic and cost-effective prevention measure (Cherono, 2011) in ensuring safety and health of a workplace. Maseko (2016) study conducted in South Africa revealed two of such training in food and beverage industries. These were training or drills specifically for fire evacuation and induction training on general workplace safety and health rules. A study conducted by Cherono (2011) also reported that safety training programmes were organized for hotel staff in Kenya.

A previous study involving catering industries conducted in 2005, had also established that occupational safety and health training were carried out in these industries (Kivlehan, 2005). These pieces of training programmes that were organised every three to six months for the staff covered areas such as electrical safety, fire safety, chemical safety, appropriate use of catering equipment, first aid, and safe use of PPE. Inversely, Tak's (2016) study presented a different story as employees had not been given any training on the administration of first aid even though, these staffs were in charge of treating

themselves in the hotels because of the non-existence of employed first aiders. Fire safety training was also contradictory as an uncommon practice among hotels in Accra. As evident in the findings of Senya's (2017) study, only 29.4% of these hotels in Accra had trained their staff on fire fighting.

About the provision of first aid as emergency prevention, preparedness and response in ensuring safety and health in organizations by employers, studies conducted in different countries including Ghana have indicated that first aid boxes existed on all the premises of hotels (Cherono, 2011; Senya, 2017; Tak, 2016) and catering industries (Kivlehan, 2005). Among these studies, Kivlehan (2005), revealed that 60% of the first aid boxes in the catering industries were fully stocked with the essential materials. However, concerning persons responsible for administering first aid, Cherono (2011), in a study conducted among hotels in Eldoret in Kenya stated that, only 37% of the hotels had first aiders to give the basic treatment to the injured at the premises. Comparably, the outcome of Senya's (2017) study involving hotels in Accra also showed that just 17.6% of these hotels had first aiders.

Further, on the procedures instituted to offer medical treatment to afflicted people within working environments, the study conducted in selected provinces in South Africa by Maseko (2016), revealed that the food and beverage industries had established an onsite clinic to cater for such persons in the facilities. A similar finding was documented in Senya's (2017) study conducted in Accra, where clinics were as well sighted in the hotels for injured workers to access in times of need.

In addition to the issues about emergency prevention, preparedness and response as cited by International Labour Organization (2001), with specifics to fire evacuation, Maseko (2016), had further stated that the food and beverage industries had written procedures for fire evacuations in the premises. The employment of fire evacuation was likewise cited in Senya's (2017) study as a measure carried out by all the hotels employed for the study in Accra. This was together with the availability of fire extinguishers and the practice of conducting a roll call for all staff in each of the hotels in times of fire outbreak. Although more than half (64.7%) of these hotels in Accra were without Assembly Points, more than two-thirds (70.6%) had emergency exits.

Also, aside from firefighting equipment such as fire alarms and fire blankets identified in food and beverage sections of the hotels employed in the study conducted in Nairobi by Tak (2016), fire extinguishers and fire exit routes with marked self-latching fire doors were likewise provided in the hotels. However, there were no directional signs to doors in the facilities. In another study, Joshua, Abubakar, Gobir, Nmadu, Igboanusi, Onoja-Alexander, Adiri, Bot, I-Joshua and Shehu (2017) acknowledged that the presence of expired fire extinguishers was identified in less than fifty percent (44%) of bakeries in Kaduna North Local government area in Kaduna State, Nigeria.

Providing PPE is also one of the responsibilities required of employers (ILO, 2009). In exploring this obligation, the findings from Cherono (2011) research indicated that, less than half (47%) of the hotels fulfilled this mandate as they offered their employees protective clothing such as gloves, uniforms and boots to ensure safety. In earlier research conducted within catering industries, Kivlehan (2005), also reported that staff of catering industries were provided

with PPEs, although these were not enough for all the workers. Examples of such items given to the workers included gloves, aprons and face masks, among others.

As a step to protect workers from accidents to promote their safety and health, Gaydos, Bhatia, Morales, Lee, Liu, Chang, Salvatore and Minkler's (2011) study conducted in San Francisco in the United States to assess the promotion of safety and health in restaurants, disclosed that only 38% of the kitchens of the restaurants employed for the study were with footstools or ladders to help workers reach foods stored at a height. In addition, just 18% of these restaurants had proper storage places for knives used in the kitchen.

With regards to matters of welfare, Tak's (2016) study in assessing the occupational safety and health risks in Sarova Staley hotel in Nairobi indicated that there was good drinking water provided by the management of the hotel for use by the kitchen staff. Senya's (2017) study also reported that all the selected hotels employed in the study in Accra had provided places of convenience for their staff.

### **Measures Employed by Employees to Ensure Safety and Health in the Workplace**

Studies on measures employed by staff to ensure safety and health in workplaces have shown that some measures had been carried out by staff in the discharge of their duties and not others. Specifically in a study conducted by Maseko (2016), among food and beverage industries in South Africa, employees (83.2%) fulfilled their obligation of reporting any form of hazard, unsafe acts or unsafe conditions in the facilities.



Rajini et al. (2012), in their study which was about identifying the practices employed in ensuring safety and health by hotels in Sri Lanka, cited the use of PPE as the most common safety and health practice carried out among the employees in all the hotels. A similar study conducted among bakery workers in Kaduna in Nigeria in 2017 also reported that the use of personal protective clothing was a common practice among workers. Precisely, 90% wore aprons, gloves (73%) and face masks (59%). However, less than half of the workers used boots (45%) and head covers (39%) in the course of work (Joshua et al., 2017). Kyalo (2016), study also reported that about 55.0% of workers in food industries in Nairobi used protective equipment in the course of the discharge of their duties.

Further on the use of appropriate protective equipment, the study by Gaydos et al. (2011) among restaurant kitchens in Chinatown in San Francisco through an observation method, noticed that the use of appropriate protective clothing was not a common practice among the kitchen staff. Only ten percent of the staff wore long sleeves which were to help prevent burns. Ninety-six percent of the cooks used rags instead of potholders for holding hot pans in the kitchens. Also, the use of earplugs, ear muffers or any noise protection enclosures as noise protection gears, was not given any priority by any bakery employee engaged in a recent study conducted by Bonsu et al. (2020), in Ghana.

Aside from being mandated for employees to attend safety and health training organized by organizations, training is also a tool for creating awareness (Cherono, 2011) for the employees. As such, employees acquiring such training can effectively help reduce the number of accidents leading to injuries, illnesses and even death. With regards to occupational safety and health



training, Kivlehan's (2005) study further indicated that only 33 % of the caterers had gone through occupational safety and health training in the catering facilities.

Specifically, to staff attending training on how to administer first aid, studies have shown some similarities in outcomes. For instance, while Cherono (2011), study conducted among hotels in Eldoret in Kenya had shown that 71% of the hotel first aiders had attended training in the area, the outcome of Senya's (2017) study conducted among hotels in Accra also revealed that 82.4% of the first aiders employed in the hotel had acquired training for the job. In an earlier study, Kivlehan (2005), additionally indicated that about two-thirds (67%) of the first aiders who administer first aid in the facility had undergone training in the area. This suggests that more than half of the persons administering first aid in both hotel and restaurant facilities have acquired knowledge in first aid.

With regards to the employee having training on the use of PPE, Maseko's (2016) study carried out in South Africa, indicated that less than half (41.1%) of the employees working in the food and beverage industries had undergone training on the usage of PPE provided by the management of the facilities. Nevertheless, 75.7% of these employees had received induction training on general workplace safety and health rules and 88.6% had attended drills on fire evacuation

An important aspect of an occupational safety and health study is employee compliance with occupational safety and health measures in the working environment across background characteristics variables. A study conducted by Kyalo (2016), in assessing the utilization of personal protective equipment among workers of the food industry in Nairobi revealed that there is

a significant relationship existing between the use of PPE and age, gender and work experience. The study further established that the use of PPE was observed more among female employees who were above 35 years of age, and those who had more than 6 years of work experience. Reportedly, Gyekye and Salminen (2011), asserted that male employees tend to ignore more safety procedures than female employees. This can be attributed to the nature of the males as people who easily take risk.

A similar study conducted among star-rated hotel workers in Addis Ababa Ethiopia in 2017 reported that background characteristics such as gender, educational status and grade of hotels were significantly associated with employee's occupational safety and health practices (Bobo, 2017). Variables like marital status and work experience were not found to be significantly associated with employees' occupational safety and health practices.

### **Barriers to Compliance with Occupational Safety and Health Measures**

Barriers hindering compliance with occupational safety and health in restaurants, hotels or the hospitality industry as a whole, have received little attention in the literature over the years. These barriers comprising physical and non-physical conditions (Sing, 2012) are factors limiting staff or management's ability to comply with the safety and health measures needed to prevent or control hazards in restaurant kitchens. As indicated by Esterhuyzen (2019), identifying the barriers to occupational safety and health compliance in a business is very important for preventing non-compliance that can lead to consequences on individuals, and the organization.

Generally, several factors have been identified as constraints to occupational safety and health in previous studies (Adanse, et al., 2017; Esterhuyzen, 2019, Yazdani & Wells, 2018). Specifically, in Esterhuyzen's (2019) study carried out among small businesses including that of hospitality in South Africa, lack of time, money and training as well as the complexity of laws, negligence, non-adherence to working procedures and unqualified supervisors were the factors identified as barriers to compliance with occupational safety and health. These factors were further categorized as individual and organizational barriers by the author.

Similarly, from a scoping review carried out by Yazdani and Wells (2018), several barriers have been recorded concerning general occupational safety and health. These were namely: lack of time, lack of resources, lack of management commitment, support and participation, lack of knowledge and training, resistance to change, changing work environment, the scope of activities, lack of trust, fear of job loss, process deficiency and difficulty in implementing controls. Inversely, lack of management commitment was rejected as a challenge to the compliance with safety and health measures by a majority (61.5%) of the kitchen staff in a study conducted by Adanse et al. (2017), to investigate safety and health measures carried out in second cycle schools in the Bolgatanga Municipality in Ghana.

At the individual level, Maseko's (2016) study undertaken to explore the effects of non-compliance with occupational safety and health among food and beverage industries in South Africa, had managerial factor cited as the cause of workers not complying with a mandated safety and health measure. Precisely, the workers in the food and beverage industry hinted that their non-compliance

to reporting any hazard or unsafe conditions that had occurred in the workplace was because of the impression that management does not prioritize work safety matters concerning the workers. Similarly, the organization not paying keen interest in safety matters of workers as well as lack of equipment in carrying out the training was also cited in Cherono's (2011) study, as the reason for not giving training to workers in the hotels in Eldoret in Kenya.

Another barrier identified in Maseko's (2016) study in South Africa, was non-compliance with the use of PPEs. The finding of the study cited the unsuitability of PPEs concerning its large size or too small a size and the concern of it not fitting well, thus preventing staff from carrying out their duties effectively in the food and beverage industry. Similarly, Kyalo's (2016) study in Nairobi listed discomfort, unfitness, unawareness, unattractiveness and unavailability of PPEs as factors causing the low compliance with the usage of PPEs among the food industry workers in Kenya.

Specifically, with the use of gloves, Kumari and Kapur (2018), also established that the substandard size gloves provided by management made it uncomfortable for the kitchen staff to use the glove because they did not fit well on the hands in Delhi in India. This was together with other barriers such as the workers' opinions of the gloves slowing down the process of food preparation when worn, the staffs' attachment to their old deep-rooted practices and the pressure of delivering orders on time.

Relatedly, in a study carried out in 2009 among Chinese immigrant restaurant workers in the United States, difficulty in wearing gloves for washing dishes faster was mentioned by the restaurant dishwashers as a factor obstructing the use of gloves for washing (Tsai, 2009). The issue of



forgetfulness to use the gloves as well as the provision of irregular size (too small the size) of gloves were captured as barriers in the use of gloves in the findings of the study.

The issue of workers feeling uncomfortable with the use of PPEs has been considered a factor that discourages them from complying with the use of the PPEs. This is then said to serve as a breeding ground for encountering undesirable outcomes according to Vidua, Chouksey, Bhargava and Kumar (2020).

At the organizational level, a study conducted by, Bonsu, Adei and Agyemang-Duah (2020) to explore the exposures to occupational hazards in bakeries in Kumasi Metropolis, underlined factors such as the cumbersome process involved in acquiring extinguishers as well as, the high cost of purchasing the fire extinguishers as the constrictions hindering the acquisition of fire extinguishers needed for the workplace. This implied that apart from the high cost of purchasing a fire extinguisher, there was also that difficulty in going through the process of acquiring the extinguishers for ensuring the safety of workers in the bakeries.

Again, in Accra, Senya's (2017) study discussing the safety rules in hospitality industries identified a problem concerning enforcement. From the finding of the study, the author mentioned nonchalant inspections conducted by enforcement agencies as the major reasons for the violation and compromise of health and safety standards in selected hotels employed for the study.

A study carried out to explore the barriers to safety and health and wellness in organizations by Sing (2012), had shown that several factors have been perceived as obstacles to the implementation of safety and health and

wellness by organizations including the hospitality ones in Singapore. These barriers were connected to employees' age, their temporal nature (turnover) and attitudes in terms of being careless, resistant to change and complacent and taking shortcuts without following safety and health procedures in the course of accomplishing their tasks. Language was a barrier mentioned by the study participants.

### **Effects of Hazards on the Safety and Health of Employees**

Workplace hazards initiate occupational safety and health consequences such as infections and injuries of staff at workstations and/or in production departments (Katsuro, Gadzirayi, Taruwona, & Mupararano, 2010; Varacallo & Knoblauch, 2019). Work is of social and economic importance to human beings since it provides an identity, a sense of self and social esteem or status and financial security or income (US National Alliance for the Mentally Ill, 1999 cited by Asumeng et al., 2015; Kirsh, Slack, & King, 2012; Stuart, 2016).

However, according to Kirsh et al. (2012), all these can be lost if a worker encounters an injury resulting from an accident at the workplace that can lead to physical impairment or disability and successively disturb the worker, both physically and emotionally at work. Mostly, the cost of workplace injuries on the employees includes loss of wages or salary, loss of overtime payment, lost investments and medical, travel or other expenses (Hrymak & Pérezgonzález, 2007; Jovanovic, 2004). Apart from the loss of quality of life of workers, another most salient cost of workers' exposure to occupational hazards is loss of life or premature death (Maseko, 2016).

When injuries occur at a workplace, workers experience pain and discomfort with the aftermath of an extreme outcome of stigmatizations, discrimination and insensitivity from employers' co-workers, compensation systems and friends (Kirsh et al., 2012; Ofoegbu, Olawepo & Ibojo, 2013). The acts constitute social groups refusing to accept the behaviours and assist or meet the needs of these workers (Fox, Smith, & Vog, 2016; Kirsh et al., 2012). For instance, injured employees are forced or harassed by employers to work assiduously as before even though, they are incapable of performing such tasks (Beardwood et al., 2004; cited by Warsi, 2014). These acts promote disability and complicate the process of recuperating and getting back to work (Kirsh et al., 2012; Stuart, 2016).

Violence at workplaces affects employees psychologically (Tepper, Duffy, & Shaw, 2001). The victims tend to suffer depression, nervousness and even shame (Kirsh et al., 2012). Consequently, this can cause a breakdown in job performance followed by a turnover (Ebeid, Kaul, Neumann, & Shane, 2003). Sometimes, abused workers find it difficult to cope especially when opportunities are not created for reporting such incidents; resulting in the victims becoming irritable and aggressive, exhibiting swing moods and abusing alcohol (Field, 1996 cited by Bloisi & Hoel, 2008).

### **Injuries**

Empirical research on the effects of work-related hazards on employees has gained significant attention over the years (Belhassen & Shani, 2012; Haruyama, Matsuzuki, Tomita, Muto, Haratani, Muto, & Ito, 2014; Hasanipour, Shakerian, & Zare, 2019; Jahangiri, Eskandari, Karimi, Kamat, Nordin, Husain, & Ali, 2017; Lee, Lee, Mun, Lee, & Kim, 2013; Maseko, 2016; Subramaniam

& Murugesan, 2015; Tomita et al., 2013; Tak, 2016). One such study conducted in South Africa revealed that 79.2% of workers in the food and beverage industries in the provinces selected had experienced work-related injuries in the course of discharging their duties (Maseko, 2016).

Highlighting the types of injuries encountered in workplaces, a study conducted recently in 2019, reporting on work-related injuries and illnesses in restaurants in Shiraz city, South of Iran, has revealed that, cuts and lacerations, burns and scalds were the kinds of injuries encountered among the restaurant workers (Jahangiri et al., 2019). A related study carried out earlier within the same decade (2013) in commercial kitchens in Hyderabad city of Telangana State likewise established that the prevalence of cuts, laceration, burns and scalds were common among cooks (Bindu & Reddy, 2016).

These outcomes are not different from a study conducted in the previous decade among catering industries in the west of Ireland, where cuts, lacerations, scalds and burns were also cited among other types of injuries experienced by catering students in the industry (Gleeson, 2001). In this study, cuts and lacerations were rated as the most frequently occurred injury recorded in the catering industry. Yet, another study focussing on hotel kitchen staff, identified cuts and burns as the usually encountered injuries in the hotel. This is followed by bruises and fractures (Tak, 2016).

Between cuts and burns as injuries experienced by kitchen staff in the food service sectors, there had been some similarities in findings concerning the most encountered injury in the literature. A study by Haruyama et al. (2014), among kitchen workers in Japan indicated that cuts were the most widely experienced injuries (23.8%) followed by burns (15.8%). In a related study,



which was also conducted among kitchen staff in Japan by Tomita et al. (2013), it was established that the prevalence of work-related burns was less (15.9%) than cut injuries (23.8%) among the respondents.

Concerning the location of parts of the body that sustained the injuries, the findings of Maseko's (2016) study indicated that 55% of the food and beverage workers cited the hand or finger as the most affected part. This was followed by the body which was mentioned by 21.9% of the workers, the arm (10.6%), the foot and leg (5.6%) and the head (1.3%) as the least affected body part.

Work-related musculoskeletal disorder (WMSD), as another form of injury, is a term used in describing injuries caused to bodily structures such as bones, nerves, joints, muscles, ligaments, and tendons (Sant, Kamthe, Shaikh, & Gaikwad, 2016). This disorder is equally evident in the literature for the past decades as a type of injury prevailing in food and beverage workstations. For instance, from a previous study conducted in the United States, Tsai (2009), found that Chinese immigrant restaurant staff experienced musculoskeletal disorders during the course of discharging their duties. Among all these types of injuries cited by the respondents in the restaurants, musculoskeletal disorder was identified as the most encountered injury among the workers. The symptoms of this injury were expressed in the form of pain, aches, soreness and numbness in the legs or feet, knees, fingers, wrists, back and shoulders of the workers. Meanwhile, arthritis (joint pain resulting from inflammation of the joints leading to stiffness of the joint), adhesive capsulitis (frozen shoulder) and carpal tunnel syndrome (nerve compression leading to numbness, tingling or weakness in the hand/wrist) were also reported among the respondents.

Although Tak (2016), found musculoskeletal disorder as one of the injuries experienced by hotel workers in Nairobi, it was however documented as the second most encountered injury after a respiratory illness in the study. The various forms of this disorder as indicated by the hotel staff are strains, sprains, aches, myalgia (muscle fatigue) and lumbago (backache).

Further on the specific nature of musculoskeletal disorders encountered among the food and beverage staff in the hospitality industry, a current study conducted in 2019 in Shiraz city in the south of Iran, found neck pain, shoulder pain, dryness of joint and elbow pains, besides back pain and kneel pain as the various musculoskeletal injuries encountered by the restaurant staff (Jahangiri et al., 2019). However, apart from low back pain that was mostly mentioned by respondents in a related study carried out among staff of Kathmandu University canteen in Nepal, upper back pain, hip pain and ankle or foot pain, alongside the usual shoulder pain, neck pain, elbow and wrist pain, were also identified as the types of musculoskeletal disorders faced by workers in the canteen (Shakya & Shrestha, 2018). Meanwhile, Tan and Balaraman (2020), in a study carried out recently among restaurant chefs in Johor and Melaka state in Malaysia, revealed that ankle or foot pain was rather the most prevalent musculoskeletal injuries, experienced by the population studied. This was followed by lower back pain and shoulder pain in that order.

On the magnitude or level of severity of the injuries encountered at workplaces, it appears most of the injuries admitted by workers in food production industries are non-fatal. For instance, in Maseko's (2016) study on food and beverage workers in some selected provinces in South Africa, it was revealed that the injuries workers encountered in the workplace were minor

injuries that required just first aid treatment and absence from work for one or more days. Comparably, this finding has not been different from what was reported previously in the United States where all (100.0%) Chinese immigrant restaurant workers described the injuries they had experienced as minor with not more than the requirement of first aid treatment (Tsai, 2009). Gleeson (2001), study also documented similar findings as very few (5.8%) incidences of injuries recorded among students in catering industries were reported as severe.

### **Illnesses/Diseases**

Regarding illnesses encountered in food and beverage facilities, hypertension, diabetes and coronary heart disease, were found among cafeteria food service workers in a study conducted among hotels in Aurangabad, Maharashtra in 2017. These were besides, obesity which is also another type of affliction recounted among cooks in the hotel (Malik & Rather, 2017).

Nevertheless, different findings were reported by Tak (2016), in a study which derived its data from the hotel nurse and clinical records on employees in a hotel. In this study, neurological illnesses, sexual dysfunction (mostly among chefs), respiratory illnesses, anaemia, skin infection (fungal infections, dermatitis, boils and rashes) and mild depression were the various work-related illnesses diagnosed in the hotel kitchen employees in Nairobi. Detailed information gathered from the nurse of the facility further indicates that the respiratory illnesses were cases of cough, colds, pneumonia and asthma and the neurological illnesses and these were also exhibited in the form of headache, migraine and neuritis. This source of data helped the study gather detailed

information on the specific illnesses the workers were suffering from, which might otherwise not have been mentioned by the employees.

On the other hand, the study on restaurants in Shiraz city in the south of Iran, conducted by Jahangiri et al. (2019), also identified renal, digestion, mental, eye, nose, ear, hair, alongside skin, cardiovascular, neurological and respiratory disorders among the workers of the restaurants. Even though respiratory disorders were recorded among the employees, they existed in the form of dyspnea, wheezing, sputum and cough. Similarly, a study by Juntarawijit and Juntarawijit (2017), recorded a higher prevalence of chronic respiratory symptoms such as dyspnea (although not severe) among restaurant workers in Tha Pho sub-district of Phitsanulok, a province in Thailand. In addition, the study recounted stuffy nose and cough disorders among the respondents.

### **Behavioural Effects**

Unsafe acts and conditions trigger unhealthy personal practices among the staff of organizations (Burton, 2010). A study by Miranda, Young and Cain (2018), focusing on the food industry indicated that there is a prevalence and upsurge in the use of the illicit drug (cocaine, marijuana, heroin, inhalants, hallucinogens and prescribed drugs used non-medically) among several food service workers. The study further revealed that the intensity level of workloads was the basis for the increase in the usage of illicit drugs among the workers as the drugs serve as energizers to help influence the performance of work. Aside from this, Frone (2008), and Pizam (2010), also attributed staff substance usage at workplaces to job stress. Pizam added conditions such as working at odd



hours and shift work as contributing factors to heavy alcohol consumption in food service industries.

Belhassen and Shani (2012) also indicated that smoking has been a predominant practice among kitchen workers in the resort city of Eilat. The major substances the workers used were cannabis alongside tobacco. Although there was a record of alcohol usage among the workers, the study established it was not significant among the workers. Alcohol consumption was similarly identified among the hotel kitchen staff involved in Tak's (2016) study conducted in Nairobi. This practice was in addition to the consumption of caffeine and undereating.

#### Injuries, Illnesses and Unhealthy Personal Practices by Background Characteristics

There had been some findings on similarities and differences in the prevalence of occupational injuries, illness and unhealthy personal practices regarding socio-demographic characteristics like gender and age in the literature. Starting with gender, Gleeson's (2001) study carried out in the west of Ireland established that, males in the catering industry suffer more occupational ill-health in general than females. Specifically, to the types of illnesses experienced by the workers, the indication from another study conducted by Kamat et al. (2017), shows that the prevalence of coronary heart disease, hypertension and diabetes except back pain was more among females than males in the UTeM cafeteria kitchen.

However, concerning injuries, other studies have otherwise established that female staff get more injured than their males. For instance, Buchanan, Vossenas, Krause, Moriarty, Frumin, Shimek, Mirer, Orris and Punnett's (2010) study conducted in hotels in the United State cited females as the gender with the highest injury rate. The outcome of this study is similar to that of Alamgir, Swinkels, Yu and Yassi (2007), whose study also affirmed female cooks as the gender most vulnerable to injuries at work.

Furthermore, there had also been findings from studies reporting on similarities and differences in line with the specific types of injuries encountered among both male and female workers. Studies by Haruyama et. al. (2014) and Tomita et. al. (2013) centring on commercial kitchen staff in Japan had equally specified in their findings that, female workers encounter lower burns, but higher cuts injuries than their male counterparts.

In a related study among hotel employees in India, musculoskeletal condition as another type of injury was likewise reported to prevail less in females than the males in a study carried out by Gawde (2018), in India. Conversely, an earlier study conducted among hotel workers in the year 2011 established the opposite. Musculoskeletal symptoms were rather experienced less by males than female hotel staff in Seoul (Lee et al., 2013).

Findings of research on the engagement of unhealthy personal practices with regard to gender also identified males carrying out the practices more than females. Specifically, Lee et al. (2013), in a study on hotels in Seoul, revealed that alcohol consumption and smoking were identified more among males than females. This same study observed that chief cooks were those engaged in drinking and smoking more than other workers in the hospitality industry. This

is comparable to Belhassen and Shani (2012), in the resort city of Eilat, where it was also uncovered that the usage of cannabis and alcohol was more significant among males than female hotel kitchen staff.

Concerning age, it is expected that younger workers will encounter more injuries at work due to low awareness of the potential hazards or understanding of work processes than older ones. ILO (2011), also indicates that while young or inexperienced workers may be at risks of encountering accidents leading to injuries because of lack of training and supervision, the older workers are vulnerable to greater risk because of a decline in their physical, sensory or cognitive abilities. Reviewing the literature, Tomita et al. (2013), in a study in Japan corroborated this assertion where it was found that, injuries such as burns and cuts were relatively higher among young workers, although, it showed no significant association. Inversely, Alamgir et al. (2007), study otherwise, reported the opposite as older female cooks and food service workers were those suffering more injuries at work than the young workers. However, Gleenson's (2001) study on catering industries showed no difference in the age ranges of respondents regarding the incident of ill-health (disease and injury).

Relatedly, alcohol and tobacco usage were also more among the young employees than the older age group of hotel workers (Belhassen & Shani, 2012). This same study also indicated that unmarried employees tend to drink more alcohol in comparison to the married group. Employees of lowest education levels were also identified with higher rate of smoking than those with academic degrees. In a study involving canteen staff of Kathmandu University, Shakya and Shrestha (2018), had relatedly revealed no significant difference between education and cigarette smoking among the staff.

Regarding work experience and education, in connection with injuries at work, Jahangiri et al. (2019), study on restaurants in the south of Iran established a significant association between the prevalence of work-related injuries and work experience. The same study also indicated that level of education did not have a significant effect on the prevalence of work-related injuries. Meanwhile, the experience of musculoskeletal disorder was indicated to be significantly correlated with age.

Among workers of food processing industries, and with regard to employment status, findings in Schweder, Quinlan, Bohle, Lamm and Huat Bin's (2015) study have indicated that there was a significant difference between permanent workers and temporal workers with regard to frequency of injuries encountered at the workplace. Precisely the study revealed that permanent workers experienced fewer injuries compared to temporal ones.

#### **Effects of Staff injuries and Illnesses/Diseases on Facilities**

Generally, hazards in an organization can gradually advance into numerous safety and health hitches such as loss of working time due to sickness absenteeism, presenteeism and expenses made for medical treatment, with the giving out of compensation afterward (Alli, 2008; Lind, et al., 2008; Phil & Ferret, 2008). There are also damages made to raw materials or finished products with an annual loss of production opportunity and loss of reputation (Adhikari, 2015; Friend & Koh, 2018).

Reputation as insinuated by a former Chairman and Chief Executive Officer of Berkshire Hathaway; Warren Buffett, takes years to build but its distraction occurs in just a minute. It is a reflection of how positively or negatively stakeholders like employees, customers and society views a facility



(Larkin, 2003). A good reputation earns an organization a continuous trust and confidence from customers, investors, suppliers, regulatory bodies, employees and other stakeholders. But, a bad reputation results in employees being unmotivated, loss of customers and stakeholder satisfaction (Gaultier-Gaillard, Louisot, & Rayner, 2009). A negative reputation of a company according to Lebeau and Duguay (2013) affects its ability to recruit new staff. The submission is that the existence of hazards in an organization often results in occupational injuries and illnesses which engineer an increase in compensation cost, the cost of staff turnover, and retraining of new staff (Hughes & Ferrett, 2013). As these happen, the organization's image is damaged or negatively painted by not only the workers but external people as well (Badekale, 2012).

Absenteeism as a failure to report to work is considered one of the major problems faced by companies in the world (Gangai, 2014). It adds to employers' cost of doing business (Foster & Vaughan 2005). When there is a rise in worker sickness, absenteeism and turnover, the effects will be high on an organization as there will be an interruption of production leading to production loss or a decrease in productivity (Hoel et al., 2003 and Niedl, 1995 cited by Bloisi & Hoel, 2008). These outcomes will not be complete without the mention of worker performance which according to Badekale (2012), is impeded or slowed down due to work stress. This presupposes that, when one or more staff are injured, absent, or out of the job, it will disrupt the workflow (Frost, 2016). Once this happens, the few staff left, may not be able to deliver as expected because there will be that difficulty to cope with the work that was usually being done by the absent co-worker(s) who have high levels of task-specific knowledge (Grinza & Rycx, 2018). Another area businesses suffer in terms of worker

absenteeism, is the paying of overtime allowances to co-workers which comes with a salary cost (Leigh, Markowitz, Fahs, & Landrigan, 2000).

Approximately, a percentage point in the rate of sickness absenteeism causes a productive loss of 0.24% which is attributed to a business like a restaurant spending to hire temporal staff or pay the current teammates for overtime to cover the duties of the absent employees (Grinza & Rycx, 2018). This is reported to affect the profit margin of that business as the cost of substituting the absent worker is said to exceed 15% of its profits (Kocakulah, Kelly, Mitchell, & Ruggieri, 2016). The cost of compensation to cover medical treatment, legal fees and expenses is also estimated at 14 -16% of the payroll of the establishment (Gonser & Weiss, 2008, cited DaRos, 2011).

Empirically, accidents occurring from hazards and resulting in injuries and sicknesses in workplaces cost employers in several ways as established in studies. Research on the cost of accidents, injuries and sicknesses resulting from hazards at the workplace appears to be very limited. Specifically, in the hospitality industry, just one study had been found in this regard (Health and Safety Authority, 2012).

This study by the Health and Safety Authority (2012), on the effects of workplace injuries on small businesses in the hospitality industry in Ireland, indicated that the cost of workplace injuries incurred by small businesses covers the medical cost which constituted 47 percent of the business's total cost. This was followed by sick pay which also amounted to 16 percent of the total cost of the businesses. Other areas of cost were wages which resulted from the replacement of staff, training or retraining, productivity losses, personal injury and legal cost, repairs and replacement costs, and increased insurance premiums

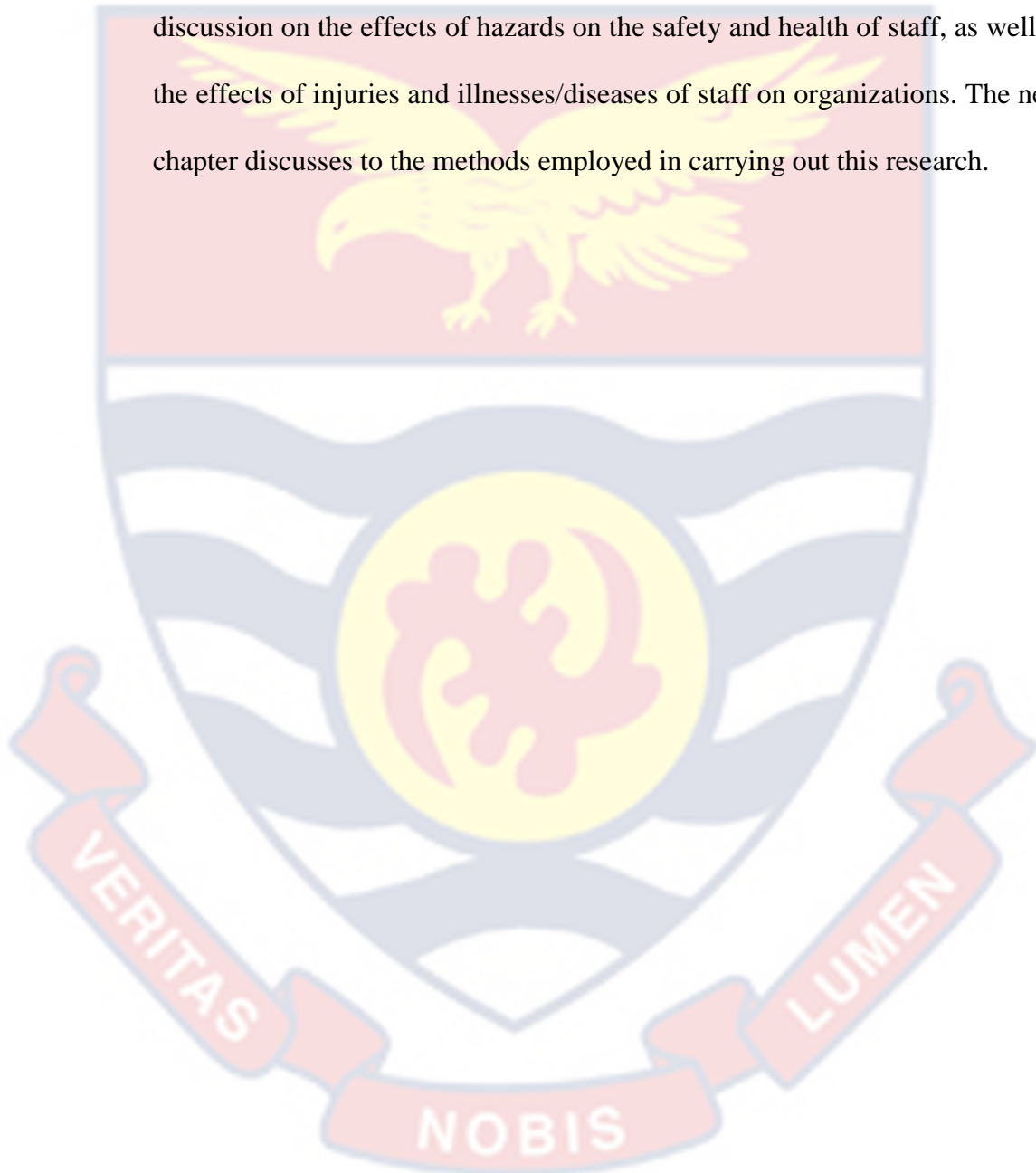
and administrative costs as the least. A study was carried out by Loke, Tan, Manickam, Heng, Tjong, Kheng, Lim, Gan and Takala (2013), also identified insurance premiums, legal costs, alongside, loss of worker output, and staff turnover costs as the cost items borne by employers in Singapore. The staff turnover cost includes administrative costs for advertisement, interviewing, and recruiting new workers to replace injured staff and training.

In another study conducted among different occupations including the catering or food and beverage services on the cost of accidents, injuries and sicknesses encountered in the workplaces in Ireland, Hrymak and Pérezgonzález (2007), mentioned salary cost and cost of personal injury claims as remittances borne by the organizations. These were alongside the cost of production, cost of retraining and increased insurance premium. Among these costs, salary cost which amounts to approximately 45 percent of the total cost incurred by employers, was highlighted as the main cost encountered by the organizations. Cost of production and cost of retraining borne by the employers accounted for 21.0% of the total cost contracted by the employers. All these costs were incurred as a result of continuous payment of salaries to absentee employees, the cost of replacing lost employees or paying for overtime. The insurance premium and personal injury claims were encountered through financial compensation and the cost of accident investigation time which is the time taken to investigate the accident and the number of persons involved in the investigation.

### **Summary**

The chapter discussed the empirical issues related to occupational safety and health. First, the chapter presented the types of workplace hazards existing

in food and beverage and accommodation establishments. Next, empirical studies on occupational safety and health measures carried out in the work environments were discussed. This was followed by barriers to compliance with occupational safety and health measures. The chapter concluded with a discussion on the effects of hazards on the safety and health of staff, as well as the effects of injuries and illnesses/diseases of staff on organizations. The next chapter discusses to the methods employed in carrying out this research.





## CHAPTER FOUR

### RESEARCH METHODS

#### Introduction

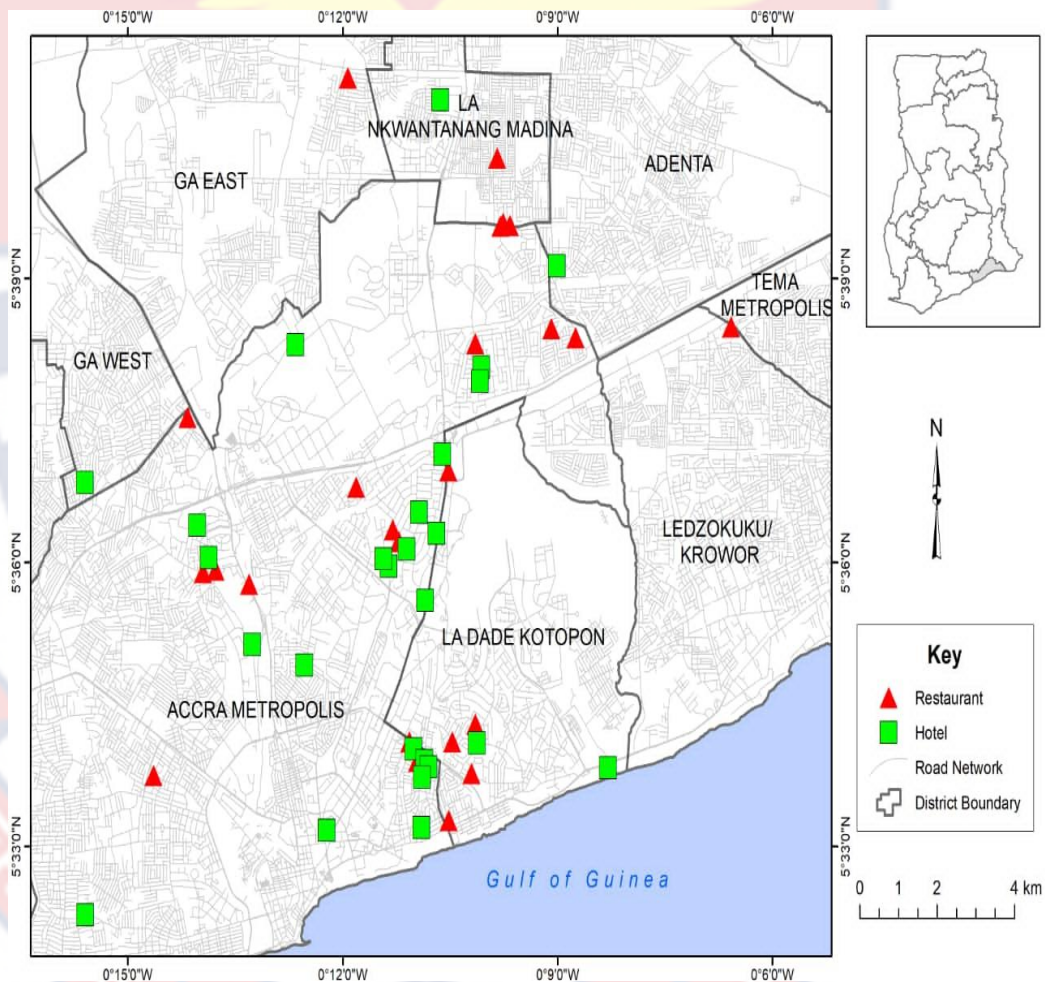
This chapter describes the research approach and methods employed in conducting the study. The specific issues presented are the description of the study area and justification for choosing the area, the research philosophy, the research design and the study design. The chapter further discusses issues such as the target population, sample size, sampling procedure, data and sources, research instrument, methods of data collection, data analysis and ethical considerations.

#### The Study Area

The study was carried out in Accra, the capital city of Ghana. Accra is found on the Gulf of Guinea; a section of the Atlantic Ocean as indicated in Figure 5. It lies partly on a cliff, 25 to 40 feet (8 to 12 meters) high and spreads northward over Accra plains. The area also lies within Latitude  $5.6037^{\circ}$  N and Longitude  $0.18790^{\circ}$  W. The city covers an area of 225.67 kilometers square. The settlement population of the selected parts of the region for the study stands at 3,993,369 per the records of the 2021 population and housing census (GSS, 2021).

The study area encompasses districts such as Accra Metropolitan District, Ga Central Municipal District, Ga West Municipal District, Ga East Municipal District, Ga North Municipal District, Weija Municipal District, and La Dede Kotopon Municipal District, Ledzokuku Municipal District, Krowor Municipal District and Okaikwei Municipal District. The area additionally incorporates Ablekuma North Municipal District, Ablekuma West Municipal

District, Ayawaso East Municipal District, Ayawaso North Municipal District, Ayawaso West Municipal District, La Nkwantanang Madina Municipal District and Adenta Municipal District. The zoning of these districts constituting Accra is based on the justification of GTA demarcations of areas considered Accra as indicated in the GTA Directory (GTA, 2020).



*Figure 5: Map Showing Restaurants and Hotels in Study Districts*

Source: Cartography and Remote Sensing Unit of the Department of Geography and Regional Planning, UCC (2022)

With regard to labour issues, Accra records the highest number of employees for the service sectors (1,015,550) representing 79.1% of the country as labour force according to the National Employment Report (GSS, 2015). This

denotes that, there are more employees providing services including hospitality services in this region than in others. The city hosts the headquarters of ministries and most agencies in charge of labour affairs.

Accra equally boasts of more licensed accommodation and food service outlets compared to the other regions in the country. With regards to accommodation, all the five-star hotels recorded in Ghana are situated in the city. Also, the majority of star-rated hotels are located in the city. Likewise, there are all categories of food and beverage establishments in the area. These range from Grade 1 restaurants, Grade 2 restaurants and Grade 3 restaurants.

All these facilities play a major role in serving several people who visit the attractions within the study area and the travellers who move through Accra to the other regions and may need food at a point in time. Students, workers and immigrants together with the indigenes are also not left out of the demand for the services of these facilities. Per se, the demand for food may increase the workload of kitchen staff who may be under pressure in an attempt to satisfy these groups of customers who patronize the facilities. In the course of working under pressure, the staff may encounter some form of accident that may result in injuries. All these aforementioned assets and attributes of the city make it a suitable area to be selected for this nature of study on occupational safety and health.

### **Research Philosophy**

In research, there is a principle regarding how data should be gathered, analysed and utilized. This structure of assumptions or credence concerning the source, nature and development or building of knowledge about a phenomenon is described as a research philosophy (Saunders, Lewis, & Thornhill, 2019). The

basic set of beliefs guiding the actions and defining a particular philosophy of the life of a researcher in social research is the paradigm underpinning the research (Lincoln, Lynham, & Guba, 2011).

Owing to the focus of this study which is to quantify and also describe the lived experiences of participants on occupational safety and health in restaurant kitchens, it is appropriate to select a philosophy that uses a pluralistic approach to derive knowledge on the phenomenon under study. As such, the research philosophy adopted for this study is pragmatism. The decision to settle on this philosophical research paradigm is based on the fact that, the paradigm will help explore more complex aspects and relations of human and the social world. It also helps to compensate or neutralize the biases, weaknesses or limitations associated with the positivist and the interpretivist paradigms.

Pragmatism is acknowledged as a new philosophical research paradigm that helps a researcher view the world through two lenses, explicitly from the positivist and interpretivist perspectives. Pragmatism depends on the views emerging from actions, situations and consequences rather than antecedent circumstances addressed by the post-positivist (Creswell, 2014). This paradigm is aligned with different philosophies of reality. This is centred on the belief that; the world is not an absolute unity. On the bases of this assumption, the paradigm has been associated with mixed methods by social science researchers as an approach to using different methods of data collection and analysis to contribute to the building of knowledge as opposing the quantitative methodology that is based on positivism and post-positivism perspectives and the quality methodology, directed towards the interpretivism.



The interpretive lens of this research philosophy according to Rahi (2017), and Thanh and Thanh (2015), deals with the study of a particular situation to have a deeper understanding of the world through the interpretation of the views of an individual in their natural setting, was used to explore managers' views on safety measures employed to ensure a safe working environment in the hotels and restaurant kitchens. This paradigm seriously upholds the belief that reality is socially constructed and is built by the individual, as such it is subjective (Creswell, 2012). Thus, with this paradigm, human interest is key as it depends on the views the research respondents have on the subjects being discussed (Creswell, 2014), which is integrated into the study. Knowledge of the interpretivist paradigm is established from personal experiences rather than unaccustomed ones gathered from the outside. In the construction of knowledge on the safety of the restaurant and hotel kitchens, this interpretive paradigm of the pragmatic philosophy will employ qualitative research methods in data collection and analysis of the issues.

Positivism strictly supports objective research where factual knowledge is predicted through empirical observation and measurement using standardized instruments without bias (Aliyu, Bello, Kasim, & Martin, 2014). The paradigm upholds the fact that knowledge is established through an organized method of data collection with a combination of deductive logic and empirical observation of a phenomenon (Creswell, 2012). That is, results from research conducted within a positivist paradigm, are usually observable and quantified using statistical analytical tools. Such studies use existing theories to develop and test hypotheses through a careful analysis of numbers from measures which this study sought to do.

Another view of this paradigm was that the world conforms to permanent and unchangeable laws and rules of action and occurrences (Aliyu, et. al., 2014). In line with this notion, the aim of the positivist philosophical paradigm is on the assumption of generalizability of research findings, where the outcome within a situation is applicable in another context using the same positivist paradigm by inductive inference (Kivunja & Kuyin, 2017). This lens of the pragmatic philosophy guiding this study was used to generalize findings with regard to kitchen employees' compliance or non-compliance with safety measures, the types of hazards they are exposed to, and the effects of these hazards through accidents on them.

### **Study Design**

The cross-sectional study design also known as a one-shot or status study is the type of study design chosen for this study. This design was considered appropriate over the other designs because of the nature of this study which sought to obtain data from a sample of respondents at a single point in time owing to the time constraint in assessing the occupational safety and health issues in restaurant kitchens. It was also considered suitable because it allowed the study to compare the safety and health issues between the hotels and independent restaurants engaged in this study. The design was chosen because according to Kumar (2011), it is most appropriate for a study seeking to observe the health needs of restaurant kitchen staff which this study sought to do. It was useful in obtaining an overall 'representation' of the findings as it stands at the time of the study. The data collected from the managers and kitchen staff helped to answer the research questions of interest.

## Data and Sources

Data for the study was obtained from primary sources. The primary data was obtained from the field survey with the kitchen staff, In-depth interviews (IDI) of hotel and restaurant managers and observations conducted in the restaurant kitchens in Accra.

## Target Population

The target population were all kitchen staff and managers of restaurants and hotels in Accra. Hotel and restaurant managers were engaged in the study because they were the key agents responsible for instituting and implementing the occupational safety and health measures in the establishment to help control hazards that lead to accidents and subsequently, injuries and diseases. Again, the managers were chosen because they were in a better position to explain how the establishments were affected by the effects of accidents and injuries on the workers. The managers constituted the target population for the qualitative part of the study and the quantitative section was for the kitchen staff.

## Sample Size

The study employed a total of 618 respondents across 196 restaurant and hotel kitchen sampled in Accra. These comprised 303 hotel kitchen staff and 315 independent restaurant kitchen staff. In addition, 16 managers of hotels (10) and independent restaurants (6) were also employed for the qualitative aspect of the study. The number of the sampled kitchen staff was derived through a reconnaissance survey carried out in 16 selected restaurants in Accra. Because every kitchen worker was prone to one form of hazard or the other, with a subsequent outcome of accidents resulting in injuries and illnesses, no particular

consideration was given to any category of the kitchen staff. Thus, all sections (pastries, sauces and vegetables) of kitchen workers were considered.

The reconnaissance survey revealed that there was an average of 60 kitchen staff in each 5-Star hotel restaurant, 45 staff in 4-Star hotels, 30 in 3-Star hotels, 20 from 2-Star hotel restaurant kitchens and 10 staff in the 1-Star hotel. The Grade 1 independent restaurant operated with an average of 20 kitchen staff, while the Grade 2 and 3 restaurants had 15 and 10 staff respectively (Table 1). These figures for each grade of hotel or independent restaurant kitchen were multiplied by the number of each corresponding facility as shown in Table 1. Ten percent of the total number from each grade of hotel and independent restaurant was then drawn to represent the desired sample size of 637 kitchen staff. The 196 restaurant kitchens represent 50% of the hotels and independent restaurants sampled for this study.

For the qualitative aspect of the study, sixteen (16) hotel and independent restaurant managers were purposively selected for the study. For fair representation, two managers were sampled from each grade of hotel and restaurant for the study.

### **Sampling Procedure**

The study employed a multi-stage sampling technique in selecting the number of hotels and independent restaurants to get the sampled respondents for the study. The first stage involved the grouping of the existing licensed restaurants in Greater Accra into independent restaurants and hotel restaurants based on GTA classifications.



**Table 1: Selected Facilities and Respondents**

Hotels						Restaurants					
Rating	No. of HR	Pop. of KS	Total Pop. of KS	Sampled KS	Sampled HR	Grade	No. of IR	Pop. of KS	Total Pop. of KS	Sampled KS	Sampled IR
	(A)	(B)	(A*B)	(10% of A*B)	(50% of A)		(A)	(B)	(A*B)	(10% of A*B)	(50% of A)
5-Star	3	60	180	18	2	Grade1	49	20	980	98	25
4-Star	8	45	360	36	4	Grade2	123	15	1845	185	62
3-Star	6	30	180	18	3	Grade3	32	10	320	32	16
2-Star	65	20	1300	130	33						
1-Star	102	10	1020	102	51						
Total	184	165	3040	303	93		204	45	3145	315	103

Source: Field Survey, 2021

NB: HR.; Hotel restaurant; IR.; Independent restaurant; KS.; Kitchen staff

The second stage centred on sub-groupings of the hotels into stars and independent restaurants into grades (Table 1). The Catering and Hotel Directory of GTA categorized hotels and restaurants into groups or grades ranging from 1-Star to 5-Star for the hotels and Grade 1 to Grade 3 for the restaurants. The details of this disaggregated list of facilities indicate that there was a total of 184 1-5-star rated hotels and 204 Grade 1-3 restaurants. In all, there were an total of 388 licensed facilities in Accra.

The breakdown of the figures (Table 1) showed that there were 3 5-Star hotels, coupled with 8 4-Star, 6 3-Star, 65 2-Star and 102 1-Star hotels. The 204 restaurants or independent restaurants constituted 49 Grade 1 restaurants, 123 Grade 2 restaurants and 32 Grade 3 restaurants (GTA, 2017). Each graded facility (star-rated hotel or graded independent restaurant) represented the stratum from which the respondents were selected. All the 5-rated star hotel restaurants and all the 3 graded independent restaurants constituting eight strata of restaurant kitchens were considered for the study. This decision was based on the assumption that occupational safety and health issues may differ for each facility.

The third stage was devoted to the determination of the sample to be assigned to each substratum of the hotels and independent restaurants. To ensure fair representation, 50% of the facilities of each stratum of hotel or restaurant were selected to form the facility sampled (See Table 1). This was informed by the time and resources available in a cross-sectional study of this nature as proposed by Fraenkel, Wallen and Hyun (2012). Together, there were 93 hotel restaurants and 103 independent restaurants for the study.

At stage 4, the simple random technique specifically, the lottery method was applied in selecting the specific number of restaurants from each stratum of each sampled facility. This technique was applied in order to ensure that all the facilities were given equal chance of being selected, hence those selected occurred by chance. As part of employing a probability sampling technique in selecting the restaurant's kitchens, a substitution list was prepared in advance taking into account the type of restaurant kitchen and in the case where a selected facility declined to participate in the study, the substitute list was relied on to replace the original facility.

Stage 5 involved the allocation of respondents to each stratum. At this stage, the respondents constituting the restaurant's kitchen staff were sampled from the respective grade of 388 facilities. Here, ten percent (1/10 sampling fraction) of each total number of stars rated hotel restaurant kitchen staff and grades of independent restaurant kitchen staff were drawn to get the actual sample size of respondents for the study (Table 1). This decision was also informed by the time and resources available for the study as suggested by Fraenkel, et al. (2012). In all, a total of 618 respondents (303 hotel restaurant kitchen staff and 315 independent restaurant kitchen staff) as shown in Table 1, were sampled for the study.

The sixth stage is where finally the respondents were selected from each of the grades of the sampled hotel (93) and independent restaurant (103) kitchens. Here a convenience sampling was applied to select the respondents. that is at this stage, every respondent in each grade of hotel or independent restaurant who was available and willing to partake in the study was given a chance in or outside the kitchen area in the premises of the hotels or restaurants.

This decision was informed by the fact that the number of staff in each facility except Grade 3 restaurant kitchen was less than what was planned to be sampled. The reason given for the decreased number of kitchen staff at post according to management was the result of them being asked to stay off due to low customer patronage of the facilities owing to the emergence of COVID-19 pandemic.

For the qualitative aspect of the study, the purposive sampling approach was used to select sixteen (16) of the hotel and restaurant managers. Involving the managers in this study, was on the basis that they were in the best position to provide the needed information to achieve the objectives of this study.

### **Methods of Data Collection**

The study employed three data collection methods. These were structured interviews, observations and IDI. A structured interview also known as a standardized interview or researcher-administered survey is a type of quantitative interview that allow a face-to-face interaction between the interviewer and the interviewee (Kumar, 2011). To ensure standardization in using the structured interview, a predetermined set of questions that were worded in the same context, manner and order were administered to the interviewees alongside the possible predetermined set of sequences of responses. The circulation of the interview scheduled to the respondents and the gathering of the data was also carried out by the researcher and the field assistants rather than the respondents being asked to read and record their responses as in the case of a self-administered questionnaire.

Using the structured interview as a method of data collection was appropriate for this study in several ways. First, the method was suitable for the kitchen staff who were envisaged to be both illiterate and literate. In the case of



the illiterates who were respondents who could not write or read to understand the content of the interview schedule, the method allowed the researcher to read the questions to the respondents for the correct answers to be selected from the alternative responses. Although the literates could read and write, there were some technical phrasings on the interview schedule that this method created the room for the interviewer to explain such phrases to the respondents for them to give precise answers. In addition, this method allowed for the clarification of questions by the respondents before answering. It helped in guaranteeing the validity and reliability of the data for the study. By this method, there was also an opportunity for the researcher to probe further for more explanations for vague answers given by respondents by this method.

Furthermore, the merit of using structured interviews for this study was grounded on the basis that because the method allowed the provision of uniform information, comparability of the data collected was assured. The method, in addition, helped to promote a higher response rate and the completion of the questions set. Furthermore, this method required fewer interview skills as such helped the researcher and field assistants to easily and effectively collect the data for the study.

An observation that helps to collect data about people, processes and cultures in social science (Kawulich, 2012) was the second strategy for gathering primary data for this study. This method helped to purposefully, systematically and selectively collect and examine the phenomenon under study, the behaviour or interaction of the respondents in a variety of contexts, as it occurred in the restaurant kitchens as suggested by Kumar (2011). Employing this method was considered suitable because it helped to obtain

information that the respondents might have otherwise been reluctant to offer to the researcher. In other words, it helped in acquiring accurate information that could not have been elicited from respondents through questioning. It also helped in getting first-hand information for the study (Sarantakos, 2013). Further, this method was suitable, because as proposed by Osang, Udoimuk, Etta, Ushieb and Offiong (2013), it assisted in obtaining reliable and objective data as well as the easing of biases, that corresponded to some attributes of the philosophy guiding the study.

Based on the focus of the study, a non-participant observation which is a type of observation that allowed the observer to remain passive in the process of recording activity in a natural setting was employed. Precisely, a structured observation was used. This was because the behaviours of interest which could be verbal or non-verbal were known. For instance, the various types of hazards outlined to exist in a working environment were mentioned in the literature (Bhagawati, 2015), and once these were known, a list of some of these hazards which can easily be detected was listed to be observed in the natural environment. The observation procedure was carried out together with the interviewing of the respondents on the same day. Photographs of safe and unsafe acts, as well as safe and unsafe conditions, were recorded in both the hotel and independent restaurant kitchens.

The next method of data collection was an in-depth interview which is a face-to-face data collection method that was used to gather data for this study. It is a qualitative research technique that allows an individual interview to be conducted with a small number of respondents to exhaustively investigate the

respondents' views about a situation (Boyce, 2006). This method was regarded as appropriate because it helped to gather comprehensive information from the managers about the cost of the injuries and ailments that had occurred in the kitchen of the hotels and the independent restaurants. It allowed having a vivid explanation to comprehend the quantitative data gathered for the study. Given the basis that just one person was interviewed at a time, using this method provided a more relaxed atmosphere with some form of comfortability for the participant to talk openly than in a group.

To effectively collect the data, the interview was carried out in a friendly conversation-like dialogue between the interviewer and interviewee. This was well directed through the use of the IDI guide constructed to help prevent both discussants from deviating from the focus of the study. In this regard, the researcher regulated the discussion to help it be in focus. Before, the commencement of the interview, the consent of the participants was sought verbally. The interview was recorded. In a few instances, the discussions were documented manually in the notebook carried along for the fieldwork

### **Research Instruments**

According to Bhagawati (2015), gathering information on the existence of hazards at a workplace can be done through responses given by the employees, as well as the inspection of the working area, among others. Both quantitative and qualitative research instruments, namely an observation checklist, IDI and interview schedule were used to obtain data from the respondents.

### Interview schedule

The interview schedule was administered to the restaurant kitchen staff as it was suspected some cannot read and write very well. The instrument was administered in both English language and Twi. It comprised of both open-ended, close-ended and Likert scale questions.

The instrument was organized into six sections. The first section quizzes hazards existing in kitchens of both hotels and independent restaurants. In this section, the respondents were provided a “yes or no” response options. The scale for the identification of the hazards was adapted using the Occupational Safety and Health Environment (OSHE) Checklist developed by ILO (2014). Some of the hazard statements were adapted from Abubakar (2017).

The second section elicited responses on the effects of accidents on employees. Here the respondents were first asked to indicate whether they had or had not encountered injuries, or illnesses in the facility as a result of their exposure to hazards in the restaurant kitchens. Next, the respondents were to indicate the type of injuries and ailments they had suffered as a result of working the last twelve months and the characteristics and magnitude of the injuries as well as the behaviours they had adopted as a result of work. The DoE Risk Management Matrix which was developed by the Department of Education of the Queensland Government (2018), was used to measure the magnitude or degree of severity of the injury or ailments among the kitchen staff. The scale was developed on a five-point scale of magnitude (no significance to critical).

The third part of the schedule dealt with questions capturing the employees’ role in complying or not complying with hazard control and preventive measures in the kitchen. Also using an option of “yes or no” the



respondents were to indicate their compliance to the safety measures demanded of them as specified by the ILO guidelines (ILO, 2009) and Ghana Labour Act, Act 651. Some of the statements regarding hazard control and preventive measures were adopted from Abubakar (2017). The fourth section focused on barriers to ensuring safety and health or compliance with hazard control and prevention measures in the kitchen. The items were measured on a five Likert scale ranging from strongly disagree to strongly agree. The statements on the barriers to compliance were informed by the search of the literature (Cherono, 2011; Kumari & Kapur, 2018; Maseko, 2016).

The fifth and the final section of the instrument concentrated on the socio-demographic characteristics and the work-related characteristics of the respondents respectively. The variables considered under the socio-demographic factors included gender, age, marital status, level of educational attainment, religion, nationality and ethnicity. The background work-related characteristics looked at a type of restaurant kitchen, grade of hotel or restaurant, type of ownership or the operation, age of hotel or restaurant, mode of employment, position and work experience of respondents.

#### **In-depth-interview guide**

A semi-structured IDI guide was used to gather data from the hotel and independent restaurant managers who were purposely selected. The guide covered three main sections. The first part focused on the cost of the effects of the injuries and ailments encountered by the staff in the hotels and restaurants. The second section bordered on the management role of complying with the hazard control and preventive measures stipulated in the ILO guidelines (ILO, 2009) and Ghana Labour Act, Act 651. The last portion of the guide tapped into

the barriers preventing the employer's from implementing or complying with the required hazard control and preventive measures in the facilities.

### **Observation checklist**

The observation checklist was used to collect data on the noticeable OSH measures instituted in the facilities, which otherwise, indicated the existence of the hazard. Specifically, the observation method was used to identify conspicuous physical hazards in the kitchen. The focus and research questions informed the structuring of these three instruments used for assembling the data for the study. The OSHE Checklist (ILO, 2014) in addition to the measures in the ILO guidelines (ILO, 2009), the Shop Safety and Factory Checklist from the Department of Factories Inspectorate (Factories, Offices and Shops Act, 1970, Act 328) and Ghana Labour Act, Act 651 were adapted in constructing this instrument.

### **Training of Field Assistants**

Two Field Assistants were employed to assist in collecting data from the respondents. The field assistants were graduate students from the University of Cape Coast. The criteria for selecting the field assistants were based on their skills and ability to conduct research and collect data, communicate, interview, pay attention to details and technical skills in the kitchen environment. Training was conducted from 29<sup>th</sup> to 31<sup>st</sup> May, 2021.

During the training, the field assistants were briefed on the purpose of the study as well as an overview of the data collection exercise. Each item on the instrument in addition to technical terms was also explained to the field assistants. They were also taken through the interpretation of the interview schedule from the English language to Twi. The trainees were afterward made

to administer the instrument to each other under the observation of the researcher. This was done to evaluate them. The outcome of this mock interview showed the preparedness of the field assistants to help collect the data effectively.

### **Pre-Testing of Research Instruments**

The research instrument was pre-tested to certify the content validity, feasibility and lucidity of the questions before the actual data collection exercise. The pre-testing allowed the field assistants to have a real feel of the respondents they were going to engage. The pre-test commenced on 1<sup>st</sup> June, 2020 and ended on 5<sup>th</sup> June, 2021 in the Cape Coast Metropolis which had some of the grades of both the hotel and independent restaurants. For the survey instrument, 24 kitchen staff from four independent restaurants and four hotel restaurants engaged in the exercise. Three managers of one hotel and two independent restaurants were employed for the qualitative aspect of the instrument.

After administering the survey instrument, Cronbach's Alpha scores were used to assess the reliability of the measurement items, especially the fourth section of the survey instrument which was a first-time scaled item. The fourth section of the survey instrument which examined the barriers to staff compliance with safety and health measures was considered appropriate and was maintained. This was because it was not clouded with any ambiguity as it had a Cronbach Alpha of 0.869, indicating strong reliability. That is, the internal consistency reliability test for the set of items was 0.869 ( $\alpha = 0.869$ ). This suggests that the measure of the barrier construct sufficiently achieved the acceptable threshold of 0.7 (Pallant, 2016). For the other sections of the

instrument, double-barrelled and ambiguous questions were identified and revised.

For the semi-structured IDI guide, the interviews were recorded and subsequently, transcribed verbatim. After the pre-test, necessary adjustments were made to the instrument. Specifically, some questions were deleted and others were modified to reflect the intent of the study. Some words and phrases were simplified and also translated into the Twi language for a clearer understanding. The pre-test also helped to estimate the time (30 to 45 minutes) for the administration of the instrument.

### **Actual Fieldwork**

The actual data collection exercise began on 10<sup>th</sup> June, 2021 through to 31<sup>st</sup> August 2021. In entering every facility and before the data collection exercise commenced, COVID-19 protocols were followed. The Human Resource Manager or General Manager was first contacted by the researcher and the Field Assistants for approval to have access to the kitchen staff. The managers in some instances introduced the research team first to the food and beverage managers for onward introduction to the head of the kitchen or directly to the head of the kitchen. The head of the kitchen then introduced the research team to the kitchen staff with the purpose of the study explained.

The administering of the instrument on some occasions among the kitchen staff began immediately after meeting the facility managers or the kitchen staff. Other times, appointments were scheduled at the convenience of the respondents for the instruments to be administered to them either at the facilities or on phone. This came up because some of the respondents were met during their busy times and some facilities were also running shifts. The need



to limit physical contact between people due to the emergence of COVID-19 was also a cause for the need to schedule an appointment to either administer the instrument at the facility or on phone. The instruments were administered to 22 kitchen staff on the phone. On the side of the managers, the interviews were mostly carried out on phone. This was after an appointment was scheduled at their convenience. Mostly, the managers opted for the evenings (6:00pm-8:00pm) or at the time when they were relaxing for interaction. The recorded interviews were played to the respondents at the end of the schedule.

On all occasions, the research team sought the consent of the respondents and assured them of their anonymity and confidentiality before the commencement of the exercise. The purpose of the study was also explained to the respondents before the start of the interview. Mostly, the exercise was carried out in the mornings (after breakfast service) or afternoons (during lunch service) depending on the scheduled time for the hotel restaurant kitchen staff. The staff from the independent restaurant kitchen staff were interviewed mostly during lunch service. Generally, both the interactions between the staff and the managers lasted mostly between 30 to 45 minutes.

The observation was mainly conducted after the respondents had been interviewed. The head of the kitchen or the managers took the researcher around the kitchen to help record what was needed. On the occasions where the researcher could not notice what was intended to be recorded, the heads or managers assisted in directing the researcher on where to find it, if not they simply told the researcher the facilities did not have the item. However, in the few instances where the interviews were permitted in the kitchens, the observation was carried out alongside the researcher's interaction with the

respondents. Pictures were taken where necessary and with the permission of the managers.

Out of the 196 hotels and restaurants sampled for the study, the actual data collection exercise among the kitchen staff was carried out in 106 facilities that allowed their staff to participate in the study (Table 2). Due to this development and to have a substantive number of respondents, all eligible staff in each grade of the facility who were willing to partake in the study were employed. The number of sampled respondents for the Grade Three restaurant kitchens were particularly increased by about 50% to make up for the low numbers for the independent restaurants. In this regard, 320 kitchen staff instead of the 618 that were sampled, participated in the study. The response rate was 51.78%.

**Table 2: New Sampled Restaurant Kitchens and Respondents**

Rating	Hotel		Restaurant		
	Hotel restaurant	Respondents	Grade	Independent Restaurant	Respondents
5-Star	1	10	Grade 1	12	42
4-Star	4	26	Grade 2	36	75
3-Star	2	12	Grade 3	16	65
2-Star	20	65			
1-Star	15	25			
Total	42	138		64	182

Source: Field survey, 2021

On the part of the managers, the IDI was carried out among ten (10) out of the sixteen (16) managers who were targeted from all the grades of hotels and restaurants. This was because these 10 eligible managers were the respondents who agreed to partake in the discussion. The breakdown of facilities from which these ten managers were employed are as follows: one 3-star, three 2-star, one 1-star, one grade 1, two grade 2, and two grade 3. Also, out of the 106 facilities that allowed their kitchen staff to partake in the study, only 94 granted the research team access to observe the acts and conditions in their restaurant kitchens.

### **Challenges Encountered on the Field**

Just like every other research, gathering data for this study was not without challenges. The challenges that came up are as follows:

First, it was difficult getting access to most of the facilities in the era of the COVID-19 in the country. Some of the registered facilities were not operating in their full capacities following the government's directives of banning social gatherings which were to help prevent the wide spread of COVID-19. In this situation, almost all the number of sampled facilities and kitchen staff targeted for this study were not met. In addressing this challenge and in order to get a substantive number of respondents, the replacement list was used in the circumstances that helped to sample other facilities. In other instances, more than the sampled number of respondents from the facility that largely accepted the exercise to be carried out among their staff were engaged for the study. This then led to an increase in the number of respondents of that facility.

Additionally, although some managers granted the research team the opportunity to collect data from their facilities, they determined the number of respondents to participate in the exercise. Most of the time, they allowed only one, two or a maximum of three of their staff to partake in the study even though, from all indications, the other participants were ready to take part in the study. To this end, the research team did not have a choice but to just accept and administer the instrument among the few respondents permitted by management to partake in the study. The implication of these acts of the managers is that there is no representativeness of the data.

Getting permission from some of the managers at the initial stage was problematic because when they saw the research team and also heard of the topic, they thought the team were agents from the Food and Drugs Authority or Accra Metropolitan Authority who were in to observe their malpractices in disguise. The managers also saw the topic as sensitive that had the potential of exposing the inefficiencies of their operations. The team took the effort to clearly explain the purpose of the study and how the confidentiality and anonymity of the responses they give were going to be held. Through the use of the introductory letters issued by the department, the research team was able to convince the managers with the understanding that the research was purely for academic purposes.

Having the full attention of the respondents who agreed to participate in the study was another difficult moment as there were some interruptions from other staff, supervisors or managers who needed the respondents' attention. Although this extended the session beyond the estimated time, the research team



waited patiently for the session to be resumed. In some cases, these respondents were contacted on phone to complete the session.

### **Data Processing and Analysis**

The research instruments used for collecting quantitative data were serially numbered, edited, coded and entered into the IBM Statistical Product and Service Solutions (SPSS) version 25 software for analysis. The data was carefully edited (cleaned) to remove all outliers or extreme values which could have affected the validity of the results. Largely descriptive and inferential statistics were used to analyse the data. Descriptive statistics such as frequencies, percentages, cross-tabulations, means and standard deviation were determined and summarized given the individual features and scores of scaled elements.

The inferential statistics carried out on the data involved Chi-square. Analytic Hierarchy Process (AHP) was also employed in analysing the data. Chi-square test was conducted to explore relationships between hazards, injuries and illnesses and measures to staff compliance with safety and health measures in the kitchen across the respondents' socio-demographic, employment and facility-related characteristics. The Analytic Hierarchy Process was used to determine the hierarchy of hazards faced by restaurant kitchen staff.

The qualitative data analysis began right after each day's data collection. In doing this, the audio recording was replayed by the researcher together with the reading of the field notes to check for emerging issues. The emerging issues were considered and explored in the next day's interview. After the entire data collection process, the data was manually transcribed verbatim. It was then

analysed using the thematic network technique. This was a simple way of organizing a thematic analysis of qualitative data.

This technique promotes the discovery of germane themes at different levels in a text and at the same time, assists in the structuring and representing of the themes (Attride-Stirling, 2001). These themes were extracted at three systematic levels which start from the lowest-order premise, through the middle-order level to the highest order. The themes were named basic themes, organizing themes and global themes (Attride-Stirling, 2001). The connection between these themes was that, once the basic theme was derived, it was then classified into the organization theme based on the underlying issues. The organizing themes were reinterpreted in line with the lowest-order theme, and together, a single conclusion, otherwise called the super-ordinate theme emerged as the global theme.

The data was also coded. The coding was both deductively and inductively done. The deductive coding was built on the themes that centred around the theoretical concerns and conceptual framework underpinning the study, while, the inductive coding was based on the major issues that arose from the transcription. Depending on the emerging issues, the recurrent ones were explored systemically under the basic themes which were further explored by uncovering the organizing themes and finally the global theme. This was carried out alongside the checking for patterns, trends and contradictions in between the codes with the interpretation of the data being made in this regard and also within the observations made. In the presentation of the findings, the narrative approach was adopted. A direct quotation from the transcriptions or analyses was also used to back the argument.

## Ethical Considerations

In every research, there are ethical dimensions. These ethical issues have become important in social science research due to several instances of human subject abuse. In this regard, this study followed some ethical guidelines to ensure that no human subject was abused. Some of the ethical considerations included: ethical clearance from UCC Institutional Review Board; informed consent, anonymity and confidentiality. To begin with, the management of all the selected catering and accommodation facilities visited were informed of the rationale and implication of the study as permission was sought to carry out such an exercise among its members and photographs were taken on the premises. This was believed to help to pre-inform and also give some assurance and confidence to the staff to willingly consent to participate in the study.

**Informed consent:** All the participants engaged in the study were individually informed of the purpose and the likely implication of the study as well as the role each participant was expected to play to complete this study successfully. The respondents were asked to verbally consent or if possible, gave written consent which was shown by ticking 'Yes' on the interview schedule before proceeding with the interview.

**Anonymity:** The management and individual respondents were assured of anonymity. That is, the management and respondents were given the guarantee that the responses they give or the behaviour or act that were observed by the researcher would not expose their identity. To effectively carry out this, care was taken not to give any clues that might lead to the easy identification of the respondents and the facilities in the research report. In detail, names and other personal contact details such as phone numbers, postal, email or house

addresses of the participants as well as the specific location, information of the independent and hotels were not captured as part of the data to the extent of being reported in the thesis. Phone numbers that were given out by the respondents for the interviews were discarded immediately after the interview sessions ended. This was in order not to have any trace of identity to the information provided by any respondent. Further, the photographs that were taken did not also reveal the identity of the participants and the location of operations. For the sake of categorization of the facilities, distinctive titles like independent restaurant-grade one to three (IR-G1 – IR-G3) and hotel restaurants; one-star to five-star (HR-1S – HR-5S) were assigned to distinguish the establishments.

**Confidentiality:** The researcher assured all participants and management that any data gathered were going to be treated confidentially. By way of ensuring confidentiality, the researcher kept all the information gathered private and was not exposed or leaked to any third party beyond the research team and the supervisors who have the right of assessing the thesis.

### **Summary**

The chapter centred on the study's methodology. The study area, research philosophy and study design, target population, data sources, sample size, sampling technique, methods of data collection and research instruments employed in gathering the data were discussed. Further, the statistical tools used in analysing the data were provided as well. Precisely, the Chi-Square Test of Independence and Analytic Hierarchy Process were used to analyse the quantitative data while the qualitative data were analysed using thematic network technique. Finally, ethical issues were also presented.



## CHAPTER FIVE

### HAZARDS FACED BY RESTAURANT KITCHEN STAFF

#### Introduction

The chapter first presents the socio-demographic and employment characteristics of the kitchen staff as well as the facility-related characteristics of the restaurant kitchens. The second aspect of the chapter focuses on hazards faced by staff of both hotel and independent restaurant kitchens in Accra. The results presented in this chapter are based on the data gathered from the kitchen staff. Issues covered were the types of hazards encountered, the variations of hazards encountered across socio-demographics, and employment and facility-related characteristics. Others include the hierarchical order of the hazards and the forms of physical, chemical, ergonomic, psychosocial, and biological hazards faced by the restaurant kitchen staff.

#### Socio-demographic Characteristics of Respondents

Table 3, depicts the socio-demographic characteristics of restaurant kitchen staff employed in the study. The socio-demographic characteristics covered were gender, age, educational level, marital status, religion, nationality, and ethnicity. The results (Table 3), show that slightly more than half (56.6%) of the respondents were females while 43.4% were males.

Regarding the age distribution of the respondents, over two-thirds (69.4%) were within the age bracket of less than 35 years. This was followed by those in the category of 35 years and above (30.6%) who formed the least among the groups. The mean age of the respondents was 32.14 years and the modal age was also 28 years. The age distribution somewhat coincides with the

**Table 3: Socio-demographic Characteristics of Respondents**

Variable	Frequency (N = 320)	Percentage (%)
<b>Gender</b>		
Male	139	43.4
Female	181	56.6
<b>Age</b>		
< 35years	222	69.4
35 & above	98	30.6
<b>Marital status</b>		
Unmarried	213	66.6
Married	107	33.4
<b>Level of Education</b>		
Basic Education	36	11.2
Secondary Education	236	73.8
Tertiary Education	48	15.0
<b>Religion</b>		
Christian	303	94.7
Islam	17	5.3
<b>Nationality</b>		
Ghanaians	314	98.1
Foreigners	6	1.9
<b>Ethnicity</b>		
Akan	152	47.5
Ewe	68	21.3
Ga-Dangbe	78	24.4
Others	22	6.8

Source: Field survey, (2021)

2015 Labour Force Report (GSS, 2016). This report revealed that more than half of the working population in Ghana were the youth who are defined to be between the ages of 15-35 years. This then suggests that staff working in the restaurant kitchens in this study were youthful and were within the working-age

class in Ghana. This finding is expected as hospitality and tourism is described as an industry for the youth. As such, employment in the industry is oriented toward the youth.

In terms of marital status, about two-thirds of the respondents were unmarried (66.6%). This was followed by those who were married (33.4%). Among the unmarried respondents in more detail, 60.7% were never married with 5.9% identified as ever married. This then suggests that most of the restaurant kitchen staff were single.

Further, on the socio-demographic characteristics of the kitchen respondents, Table 3, shows that just 11.2% of the respondents had acquired Basic Education. Respondents with Secondary Education qualifications were the leading (73.8%) educated personnel employed in the restaurant kitchens. Tertiary Education certificate holders were also few but, the next highest category (15.1%) of employees recorded in the study. In all, there were more Ghanaian respondents (98.1%) than their foreign counterparts (1.9%).

As evident in Table 3, the respondents belonged to two main religious groups namely Christianity and Islam. The Christians constituted 94.7% of the group and the Moslems 5.3%. With regard to ethnicity, the largest ethnic group observed in the study were Akans (47.5%). This was followed by the Ga-Dangbe (24.4%) and Ewe (21.3%). There were also few of other tribes constituting 6.9%.

### **Employment and Facility-Related Characteristics**

The employment and facility-related characteristics recorded in this study include the type of restaurant kitchen, grade of the hotel restaurant kitchen, type of ownership of the operation, years of establishment of hotel or

independent restaurant, the status of workers, staff position and experience of workers. The details of the employment and facility-related characteristics explored in the study are presented in Table 4.

**Table 4: Employment and Facility-Related Characteristics of Respondents**

Work/Facility-related characteristics	Frequency (N=320)	Percentage (%)
<b>Type of facility</b>		
Independent Restaurant	182	56.9
Hotel restaurant kitchen	138	43.1
<b>Grade of Hotel</b>		
Upmarket hotels (3-5)	48	34.8
Two Star	65	47.1
One star	25	18.1
<b>Grade of Restaurant</b>		
Grade One	42	23.1
Grade Two	75	41.2
Grade Three	65	35.7
<b>Type of ownership of operation</b>		
Sole proprietorship	274	85.6
Joint partnership/Franchise	46	14.4
<b>Years of facility establishment</b>		
<10 Years	102	31.9
10-19 Years	130	40.6
20 & above Years	88	27.5
<b>Status of Workers</b>		
Permanent	284	88.8
Temporal	36	11.2
<b>Staff position in kitchen</b>		
Chef	96	30.0
Cook	176	55.0
Kitchen assistant/ Steward	48	15.0
<b>Experience of workers</b>		
< 10 Year	269	84.1
10 years & above	51	15.9

Source: Field survey, (2021)



As shown in Table 4, over half (56.9%) of the respondents were associated to the independent restaurant kitchens while the remaining 43.1% worked with the hotel restaurant kitchens. At the hotel level, the distributions of the respondents were as follows: upmarket hotels (34.8%), two-star hotels (47.1%), and one-star hotel (18.1%) discretely. The upmarket hotels constituted the three to five-star hotels. Explicitly, there were 18.8% four-star hotels and 8.0% five-star and three-star hotels discretely. At the restaurant level on the other hand, while 41.2% of the respondents were working in grade two restaurants, 35.7% were in grade three restaurants and 23.1% were in grade one.

Concerning business ownership, a greater number of the respondents (85.6%) in this study were working in facilities that were solely owned by individuals whereas, the rest constituting less than one-fifth (14.4%) worked in facilities that were in joint venture-ships and franchise. Close to one-third (31.9%) of the respondents were working in establishments that had operated for less than 10 years. Aside from this, slightly above one-fourth (27.5%) were in the hotels and restaurants that had also existed for 20 years and beyond whereas about 41.0% had been in existence from 11-19 years.

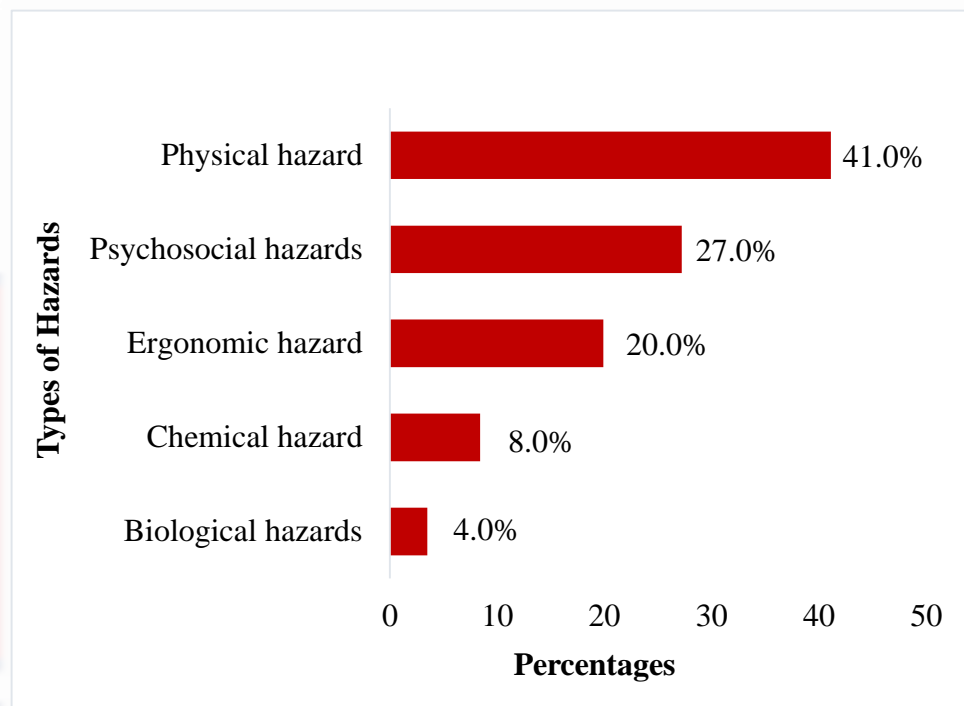
Approximately 89% of the respondents who participated in the study were employed as permanent staff in the restaurant kitchens and just 11.2% were working as temporary staff (casual, contract and attachment/internship). This outcome is comparable to a study by Jeon, Park, Jang, Choi and Hong (2015), which reported a higher percentage of permanent kitchen employees than the transitory ones.

As evident in Table 4, there were more Cooks (55.0%) than Chefs (30.0%) and Kitchen Assistants/Stewards (15.0%). Again, this finding aligns with the higher proportion of cooks in restaurant kitchens cited by Jeon et. al. (2015). Out of the number of kitchen staff employed in this study, a greater proportion (84.1%), had been working for less than 10 years in their current place of work. Around 16.0% had also had the experience of working for 10 years or more in restaurant kitchens. This then implies that; most kitchen staff working in the hotels and independent restaurants in Accra do not have up to 10 or exceeding years of working experience in their area of work.

The classification of experiences of workers used in this study is based on the further analysis that was conducted in relation to years of work experiences of the kitchen staff. Given the nature of analysis that was conducted with the years of workers experience of categories, if it was not grouped based on the ten-year intervals, there would have been so many categories that will obscure any significant meaning that may emerge from the analysis.

### **Hazards Faced by Staff in Restaurant Kitchens**

This section presents the hazards reported by respondents in both hotel and independent restaurant kitchens. On the whole, different categories of hazards were identified in the restaurant kitchens. Figure 2, indicates that the restaurant kitchen staff encountered five main hazards namely; physical hazard, chemical hazard, ergonomic hazard, psychosocial hazard, and biological hazard. This finding contradicts that of Tsai and Salazar (2007) study which did not identify biological hazard as one of the hazards identified in the restaurant kitchens in the United States.



*Figure 6: Hazards Faced by Restaurant Kitchen Staff*

Source: Field survey, (2021)

Overall, physical hazards emerged as the leading hazard faced by kitchen staff (41.0%). This was followed by psychosocial hazard (27.0%), ergonomic hazard (20.0%) and chemical hazard (8.0%). Biological hazard represented only 4.0%. This result implies that the restaurant kitchen staff were mostly confronted with physical hazards than the other groups of hazards. This result implies that the restaurant kitchen staff were mostly confronted with physical hazards than the other groups of hazards.

The finding is comparable to Tiwari (2015), who documented physical hazards as one of the prominent hazards encountered by roadside restaurant staff. However, the finding is at variance with that of Abubakar (2017), who identified ergonomic hazards as the main hazard confronting hotel staff in Kaduna Metropolis in Nigeria, and Tak (2016), who also chronicled all the five types of hazards as the key hazards faced by the hotel kitchen staff.

## Socio-demographic Characteristics and Types of Hazards Faced by Restaurant Kitchen Staff

This section explores hazards encountered in the restaurant kitchens by staff and their socio-demographic characteristics. The Chi-square Test of Independence was employed to establish the relationship between the five types of hazards and the respondents' socio-demographic characteristics like gender, age, marital status, and educational attainment. The results of the analysis as indicated in Table 5, show that generally, physical hazard was the dominant hazard across the entire socio-demographic categorizations of the respondents with biological hazard as the least.

**Table 5: Socio-demographic Characteristics by Types of Hazards Faced by Kitchen Staff**

Characteristics	Types of hazards (%)					$\chi^2$	(p-value)
	PH	CH	EH	PSYH	BH		
Gender						9.65	0.047
Male	40.3	9.5*	19.1	28.1	3.0*		
Female	41.7	7.5	20.6	26.4	3.8		
Age						1.11	0.893
< 35 years	41.3	8.3	19.8	27.2	3.3		
35 & above	40.5	8.6	20.1	27.0	3.9		
Marital status						0.27	0.992
Unmarried	41.3	8.4	19.8	27.0	3.5		
Married	40.6	8.5	20.0	27.5	3.5		
Level of Education						4.09	0.849
Basic Education	38.2	8.0	21.3	29.1	3.4		
Secondary Education	41.4	8.3	19.6	27.1	3.6		
Tertiary Education	41.7	9.4	20.1	25.8	3.0		

Source: Field survey, (2021)

NB: PH.; Physical hazard; CH.; Chemical hazard; EH.; Ergonomic hazard; PSYH.; Psychosocial hazard; BH.; Biological hazard

Note: significant value at  $p \leq 0.050$

\*Cells that produced the statistically significant difference (using critical value of  $\pm 1.96$ )



The analysis show that the male kitchen staff encountered more physical hazard (40.3%), followed by psychosocial (26.4%) hazard in the restaurant kitchens. Chemical and biological hazards were also encountered among 9.5% and 3.0% of the male respondents respectively. The female respondents, also faced more physical (41.7%) and psychosocial (26.4%) hazards than the other types of hazards in the kitchen. As indicated in Table 5, there is a significant relationship between the types of hazards and gender ( $\chi^2 = 9.65$ ;  $p = 0.047$ ). Conducting a Chi-square Test of Independence Post hoc, the difference was found between males who encountered chemical and biological hazards.

The male staff encountering more physical hazard in the restaurant kitchen is similar to an observation made by Biswas, et al (2021), in their assessment of studies relating to gender, age and the risk of exposure to hazards. However, the finding is at variance with Vives, et al. (2018), study which indicated that male employees are mainly exposed to ergonomic and psychosocial hazards in their workplace.

#### **Employment and Facility-Related Characteristics and Types of Hazards Faced by Restaurant Kitchen Staff**

The Chi-square Test of Independence was again employed to explore the relationship between the types of hazards faced by respondents and, employment and facility-related characteristics. The results as presented in Table 6, show that there is a significant association between respondents' position in the restaurant kitchens and the type of hazard encountered in the kitchen ( $\chi^2 = 15.29$ ;  $p = 0.050$ ). The Chi-square Test of Independence Post hoc results reveal that the significant difference occurred among the cooks who faced chemical and psychological hazards.

**Table 6: Employment and Facility-Related Characteristics by Types of Hazards Faced by Kitchen Staff**

Characteristics	Types of hazards (%)					$\chi^2$	p-value
	PH	CH	EH	PSYH	BH		
Type restaurant kitchen						4.11	0.392
Independent restaurant	41.2	8.3	19.9	27.6	3.0		
Hotel restaurant	40.9	8.6	19.8	26.6	4.1		
Grade of Hotel						12.77	0.120
Upmarket hotels (3-5)	42.4	10.1	17.9	24.3	5.3		
Two-Star	39.4	8.0	20.5	28.7	3.4		
One-Star	42.7	7.2	21.8	24.9	3.4		
Grade of Restaurant						14.25	0.076
Grade 1	43.2	9.0	18.6	25.1	4.1		
Grade 2	38.6	9.2	20.9	29.1	2.2		
Grade 3	43.0	6.7	19.7	27.4	3.3		
Years of operation of hotel/restaurant						12.31	0.135
<10 Years	39.9	9.2	21.3	26.0	3.7		
10-19 Years	42.6	7.8	19.1	27.8	2.6		
20 & above	40.3	8.5	19.4	27.5	4.3		
Mode of Employment						1.24	0.872
Permanent	41.0	8.4	19.8	27.3	3.5		
Temporal	41.9	8.2	21.1	25.9	2.9		
Position in kitchen						15.30	0.050
Chef	39.2	8.8	20.1	28.9	3.0		
Cook	42.9*	8.3	20.0	25.0*	3.8		
Kitchen Assistants/Steward	38.5	8.1	19.0	31.0	3.4		
Work experience						8.71	0.069
< 10 Year	41.5	8.5	19.8	27.1	3.1		
10 & above	38.9	8.2	20.5	27.3	5.2		

Source: Field survey, (2021)

NB: PH.; Physical hazard; CH.; Chemical hazard; EH.; Ergonomic hazard; PSYH.; Psychosocial hazard; BH.; Biological hazard

Note: significant value at  $p < 0.050$ \*Cells that produced the statistically significant difference (using critical value of  $\pm 1.96$ )

Within the types of hazards faced by the kitchen staff in relation to the positions held in the kitchens, it emerged that the respondents who worked as cooks in the restaurant kitchen faced more physical (42.9%) hazards and 25.0% encountered psychological hazard. Chemical hazard was recorded among 8.3% of the cooks. Chefs (39.2%) and Kitchen Assistants/Steward (38.5%) also encountered more physical hazards compared to the other types of hazards in the kitchens.

The results further illustrate that there are no significant relationships identified between the types of hazards and the employment and facility-related variables including type of restaurant kitchen, grade of hotels, grade of restaurants, years of operation, mode of employment, and respondents' work experience in the current place of work.

#### **Hierarchy of Hazards Faced by Restaurant Kitchen Staff**

Analytic Hierarchy Process (AHP) was employed to determine the hierarchy of hazards faced by individuals who worked in the kitchens of hotel restaurants and individual restaurants in Accra. The AHP as a statistical package was developed by Thomas Saaty at Wharton School of business as a model meant to help management consultants to make informed decisions. The model enhances the incorporation of the subjective judgment of individuals to constitute an important part of the decision process. It is underpinned by fundamental calculations such as the scaling of elements involved, building a comparison matrix, and finally, the calculation of eigenvalues.

### Developing the AHP Model (Formula)

The building of the AHP model followed several stages. The first stage was to develop an overall problem into a hierarchy, consisting of a goal, criteria, and alternatives. A goal refers to the aim one has to achieve at the end of a decision-making process. In this case, the goal was to identify the most encountered hazard in the restaurant kitchen, followed by the criteria which were about the factors used in selecting a hazard that was faced by staff. Here the criterion used was the reliability of hazards encountered. The alternatives referred to the various hazards (physical, psychosocial, ergonomic, chemical, and biological) identified to be likely encountered by the staff.

The next step constituting the second stage was the evaluation of the AHP. This was performed based on the judgment of staff regarding the hazardous condition that they faced in the kitchen. The scale made for the ranking of the hazards present in the kitchen revealed physical hazard as the first, followed by psychosocial hazard, ergonomic hazard, chemical hazard, and biological hazard in that downward order.

The third stage is where the decision criteria were compared in a pairwise comparison manner to the criterion preceding them in the hierarchy. At this stage, a mathematical process was used to calculate the primacies for the hazard alternative concerning the criteria. For the process, a full pairwise comparison matrix which produced a five-by-five matrix based on the hierarchy of the ranked hazards was built (Table 7).



**Table 7: Full Pairwise Matrix Based on Hazard Encountered by Kitchen Staff Scale**

Types of hazards	Physical hazard	Psychological hazard	Ergonomic hazard	Chemical hazard	Biological hazard
Physical hazard	-	1.52	2.05	5.13	10.25
Psychosocial hazard	0.66	-	1.35	3.38	6.75
Ergonomic hazard	0.49	0.74	-	2.50	5.00
Chemical hazard	0.20	0.30	0.40	-	2.00
Biological hazard	0.10	0.15	0.20	0.50	-
Total	2.44	3.70	5.00	12.50	25.00

Source: Field survey, (2021)

Note: Column A is the elements on the vertical axis

Row 1 is the element on the horizontal axis

The matrix was used to compute the unidimensional primacy score for the five hazards encountered in the restaurant kitchen. The matrix was divided into two values by a diagonal: values above the diagonal constituted the main rating, and those below were comprised of the reciprocals. In Table 7, the value in row 1 and column A is the measure of the hazard encountered in row 1 over the hazard encountered in column A. For example, a physical hazard encountered by the kitchen staff was about ten times more than a biological hazard and it was five times more than a chemical hazard. In other words, the probability that staff encountered a physical hazard as against a biological hazard was 10.25 times, but, 5.13 times against a chemical hazard.

Additionally, the likelihood that staff encountered a psychosocial hazard against an ergonomic hazard was 1.35 times. On the other hand, the probability that a staff encountered a biological hazard as against a physical hazard is 0.10 and a chemical hazard against a physical hazard is 0.20. The matrix was used to compute the unidimensional prevalence of the hazards encountered by the staff of the restaurant kitchens in terms of reliability.

The final stage, being the fourth stage was to calculate the prevalence of each of the hazards being compared. Here, the relative hazards as displayed in Table 8, was used to estimate the primacy of the five hazards encountered in the kitchen based on the reliability criteria. This was achieved by building a normalized matrix through the following procedure.

1. The summation of the values in each column of the pairwise comparison matrix in Table 7.
2. Additions of the entries in each column which was done by dividing the total of the columns to obtain the normalized matrix in Table 8.
3. Obtaining an average of each row of normalized matrix. This was done by adding the entries in a row and then dividing it by the number of entries in the row. The averages were taken as the estimates of all the primacies for the hazards encountered by the staff in terms of reliability.

The results of the row averages provided the approximation of the odds of the five hazards encountered by the staff in terms of reliability. The distribution of the odds of the hazards is 0.41, 0.27, 0.20, 0.08 and 0.04 as shown in Table 8. Specifically, the odds of a staff encountering a physical hazard is 0.41 while the odds of a staff encountering a biological hazard is 0.04

**Table 8: Normalized Matrix Based on the General Encountered Hazard****Ordering Scale**

Types of hazards	X1	X2	X3	X4	X5
	PH	PSYH	EH	CH	BH
X1 Physical hazard	0.41	0.41	0.41	0.41	0.41
X2 Psychological hazard	0.27	0.27	0.27	0.27	0.27
X3 Ergonomic hazard	0.20	0.20	0.20	0.20	0.20
X4 Chemical hazard	0.08	0.08	0.08	0.08	0.08
X5 Biological hazard	0.04	0.04	0.04	0.04	0.04
Total	1.00	1.00	1.00	1.00	1.00

Source: Field survey, (2021)

NB: PH.; Physical hazard; Psychosocial hazard; EH.; Ergonomic hazard; PSYH.; CH.; Chemical hazard; BH.; Biological hazard

### **Forms of Physical Hazards Faced by Staff of Hotel and Independent Restaurant Kitchens**

Presented in Table 9, were the forms of the physical hazards encountered by the restaurant kitchen staff in Accra. In all, eleven unsafe acts and conditions were used to assess physical hazards in both the hotel and independent restaurant kitchens. Among these factors, getting in contact with hot pots or cookware (96.9%), using sharp cutting tools or appliances (96.9%), and being

**Table 9: Forms of Physical Hazard Faced by Kitchen Staff in Hotels and Independent Restaurants**

Hazards	Overall		HR		IR	
	Freq (N = 320)	% (100)	Freq (N = 182)	% (56.9)	Freq (N = 138)	% (43.1)
Get in contact with hot pots or cook wares	310	96.9	134	43.2	176	56.7
Use of sharp cutting tools or appliances	310	96.9	132	42.6	178	57.4
Exposure to naked fire	303	94.7	126	41.6	177	58.4
Experience hotness/heat in the kitchen	277	86.6	115	41.5	162	58.5
Use of noisy metal tools or appliances	211	65.9	98	53.6	113	46.4
Experience coldness from cold foods or cold storage facilities	163	50.9	83	50.9	80	49.1
Come in contact with broken glass wares	110	34.4	38	34.5	72	65.5
Use faulty cooking tools or appliance	37	11.6	18	48.6	19	51.4
Use of combustible materials near fire	15	4.7	6	40.0	9	60.0
Wear loose-fitting sleeves of dresses near the fire	2	0.6	0.0	0.0	2	100.0
Overload electrical sockets with appliances	2	0.6	2	100.0	0.0	0.0

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at least one of the five hazards in the kitchen

exposed to naked fire (94.7%) were the most hazardous conditions faced by staff of the restaurant kitchens. As evident in Table 9, getting in contact with hot pots or cookware (56.7%), using sharp cutting tools or appliances (57.4%), exposure to naked fire (58.4%) were dominant among the independent restaurant kitchen staff than the hotel staff.



Experiencing heat resulting from fire and hot steam during cooking in the kitchens was additionally, a key environmental factor threatening the safety and health of more than two-thirds (86.6%) of the restaurant kitchen staff. This is similar to the results of a study by Bindu and Reddy (2016), and Tsai and Salazar (2007), who also found that experiencing hotness/heat in the kitchen as a hazard were common among the kitchen staff.

Another common unsafe act constituting physical hazard in the kitchen was the use of noisy metal tools or appliances such as metal cutleries, cooking pots, and electromotive-driven kitchen devices like blenders and mixers which could cause damage to the ears of the respondents. As shown in Table 9, around two-thirds (65.9%) of the respondents indicated that they use these dangerous tools or appliances in the kitchen. The distribution among the two facilities were hotel restaurants (53.6%) and independent restaurants (46.4%).

Still, with the existing unsafe environmental elements in the restaurant kitchen, around one-third of the respondents (34.4%) also came into contact with broken glass wares. Specifically, 65.5% of the independent restaurant kitchen staff came into contact with broken glass wares compared to their colleague hotel restaurant kitchen staff (34.5%). The finding of respondents coming into contact with broken glass wares affirms Tsai and Salazar's (2007) study which also reported the incidence among kitchen staff in the United States.

As shown in Table 9, using combustible materials near the fire (4.7%), overloading electrical sockets with appliances (0.6%), and the wearing of loose-fitting sleeves of dresses near hot burners (0.6%) were the least of the unsafe acts and conditions prevailing in the restaurant kitchens. As presented in the

Table 9, all the respondents who overloaded electrical sockets with appliances were linked to the hotel restaurant kitchen (100.0%). Whereas, all those who wore loose-fitting sleeves of dresses near hot burners were independent restaurant kitchen staff.

### **Forms of Chemical Hazards Faced by Staff of Hotel and Independent Restaurant Kitchens**

As specified in the Ghana Labour Act, Act 651, venomous substances or materials are risky to the safety and health of the workers. Captured in Table 10, are six specific chemical toxins considered as unsafe to the health of the kitchen staff. The picture painted in Table 10, implies that these chemical constituents were not very much encountered among the kitchen staff as less than half of the staff admitted encountering them during their discharge of duties.

Within the six conditions listed (Table 10), less than half of the kitchen staff (43.1%) encountered fumes emanating from overheated oil, over-melted sugar, or burnt foods while cooking. This was the main chemical hazard the staff encountered in the various restaurant kitchens and it was encountered by 51.4% of the hotel restaurant kitchen staff than among the independent restaurant kitchen staff (48.6%). The finding is consistent with Rajini et al.'s (2012), study which also acknowledged the presence of fumes as a hazardous condition in a kitchen setting.

The second highest hazardous chemical substance faced by staff in the kitchen was soot emanating from cooking (31.3%). This hazard was encountered more by the independent restaurant kitchen staff (58.0%) than the hotel kitchen staff (42.0%). In a related study carried out by Qiang and Chow

(2007), this substance was similarly encountered among commercial catering kitchen staff in China. These results imply that fumes and soot are common chemical substances that kitchen staff encounter in their course of work.

**Table 10: Forms of Chemical Hazards Faced by Kitchen Staff in Hotels and Independent Restaurants**

Hazards	Overall		HR		IR	
	Freq (N =	% (100)	Freq (N =	% (56.9)	Freq (N =	% (43.1)
Fumes emanate from overheated oil, over melted sugar/burnt foods when cooking	138	43.1	71	51.4	67	48.6
Soot emanates from cooking	100	31.3	42	42.0	58	58.0
Smoke emanates from fuel in the kitchen	44	13.8	19	43.2	25	56.8
Use of harsh bleaches for cleaning	38	11.9	16	42.1	22	57.9
Gas leaking in the kitchen	36	11.3	16	44.4	20	55.6
Dusty kitchen environment	1	0.3	1	100.0	0.0	0.0

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at least one of the five hazards in the kitchen

The use of harsh bleaches for cleaning and gas leakages in the kitchen were also encountered by 11.9% and 11.3% of the staff respectively. These two chemical hazardous conditions in the restaurant kitchens were similarly cited in a study by Tsai and Salazar (2007). However, as much as gas leakage was also not a common condition reported by Tsai and Salazar (2007), the use of harsh bleaches for cleaning in the kitchen was contrary a prominent chemical hazard

encountered by the kitchen staff in Tsai and Salazar (2007) study conducted in the United States.

From the results (Table 10), dust was the very least (0.3%) of the hazardous substance encountered by kitchen staff. Specifically, the dust was encountered only in a hotel restaurant kitchen. This finding of encountering dust in the restaurant kitchen is in contrast to Qiang and Chow's (2007) study which found this condition as one of the main prevailing hazards in a commercial kitchen.

### **Forms of Ergonomic Hazards Faced by Staff of Hotel and Independent Restaurant Kitchens**

The results from Table 11, show that standing for long hours during meal preparation was the most widely experienced ergonomic hazard. More especially, it was encountered by 56.3% of the independent restaurant kitchen staff compared to the hotel kitchen staff (43.7%). The finding of staff standing for long hours during the discharge of their work coincides with the observation made in Nairobi by Tak (2016), who also recorded the same hazard among similar respondents.

Working without sitting throughout the discharge of duty was also mentioned by 50.3% of the staff as a hazard they faced in the kitchen. Another ergonomically hazardous condition experienced among the kitchen staff was the lifting of heavy objects and equipment (39.7%) and repetitively working in awkward postures (36.6%). In both situations, the hazards were encountered more among 59.8% and 61.5% of the independent restaurant kitchen staff respectively.



**Table 11: Forms of Ergonomic Hazards Faced by Kitchen Staff in Hotels and Independent Restaurants**

Hazards	Overall		HR		IR	
	Freq (N =	% (100)	Freq (N =	% (56.9)	Freq (N =	% (43.1)
Standing for long hours during meal preparation	252	78.8	110	43.7	142	56.3
Working without sitting throughout the discharge of duty	160	50.3	70	43.8	90	56.3
Lifting heavy objects and equipment	127	39.7	51	40.2	76	59.8
Repetitively working in awkward postures	117	36.6	45	38.5	72	61.5
Inadequate kitchen space	67	20.9	31	46.3	36	53.7
Overstretching to reach utensils, ingredients or items	56	17.5	15	26.8	41	73.2
Following improper work procedures	48	15.0	16	33.3	32	66.7
Use of improperly designed work tools	15	4.7	8	53.3	7	46.7

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at least one of the five hazards in the kitchen

The observation that lifting heavy objects and equipment is a hazard confronting kitchen staff is consistent with studies conducted by Bindu and Reddy (2016), Tak (2016), and Tsai (2009), who reported the same findings in similar workstations. The finding of repetitively working in uncomfortable positions was likewise recounted as unsafe situations confronting kitchen staff

in studies carried out by Syed Ali et al. (2018), and Kamat et al. (2017) in Malaysia. This suggests that the two ergonomic hazardous scenarios are typical of commercial kitchen work.

As shown in Table 11, overstretching to reach utensils, ingredients, or items from height (17.5%), following improper work procedures (15.0%), and using improperly designed work tools were the bottom three ergonomic hazards confronting staff in restaurant kitchens. Between the facilities, the results reveal that while, overstretching to reach utensils, ingredients, or items (73.2%) and following improper work procedures (66.7%) were linked more to the independent restaurant kitchen staff, the majority (53.3%) of the hotel kitchen staff were faced with the use of improperly designed work tools. The finding on the use of improper tools in the kitchens corresponds with the results of a study by Rajini et al. (2012), that also identified the condition as a hazard facing staff in hotel kitchens in Sri Lanka in Asia.

### **Forms of Psychosocial Hazards Faced by Staff of Hotel and Independent Restaurant Kitchens**

Psychosocial hazards include risk factors affecting the psychosomatic safety of workers in the restaurant kitchens as depicted in Table 12. Out of the ten under-listed factors, working under pressure to meet deadlines was a major psychosocial risk factor 70.0% of the staff faced in the kitchen. Mainly, 57.1% of the independent restaurant kitchen staff were confronted with the hazard working under pressure to meet deadlines. Similar to the finding of Bloisi (2012), this condition of working under pressure to meet deadlines was cited among other risk factors encountered by staff in a commercial kitchen in the United Kingdom.

**Table 12: Forms of Psychosocial Hazards Faced by Kitchen Staff in Hotels and Independent Restaurants**

Hazards	Overall		HR		IR	
	Freq (N =	% (100)	Freq (N =	% (56.9)	Freq (N =	% (43.1)
Work under pressure to meet deadlines	224	70.0	96	42.9	128	57.1
Run shifts in the kitchen	218	68.1	105	48.2	113	51.8
Work overtime	168	52.5	77	45.8	91	54.2
Being bullied at worked	151	47.2	58	38.4	93	61.6
Being shouted/yelled at in the kitchen	143	44.7	55	38.5	88	61.5
Overwork in the kitchen	112	35.3	51	54.5	61	45.5
Work without break/rest	70	21.9	31	44.3	39	55.7
Received insults at work	65	20.3	18	27.7	47	72.3
Harassed at work	4	1.3	1	25.0	3	75.0

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at least one of the five hazards in the kitchen

Aside from working under pressure, other risk factors mentioned by more than half of the respondents as psychosocial hazards were the practices of running shifts (68.1%) and overtime working (52.5%). These two hazardous conditions were respectively encountered more among 51.8% and 54.2% of the independent restaurant kitchen staff. Engaging in overtime work is a finding that was similarly observed in another study by Tak (2016) which was carried out among kitchen staff in Nairobi.

Further, on the forms of psychosocial hazards confronting the restaurant kitchen staff, bullying was also encountered by less than half (47.2%) of the

respondents. Most (61.6%) of the bullying occurred in the independent restaurant kitchens. Being shouted or yelled at in the course of work as a form of bullying was two times more (44.7%) than receiving insults at work (20.3%). Nevertheless, both forms of hazards of being shouted/yelled at (61.5%) or being insulted (72.3%) were experienced by the majority of the independent restaurant kitchen staff. These acts of being bullied and shouted at in the commercial kitchens were equally confirmed by Bloisi (2012). Just 3.1% of the respondents had been harassed and the distributions among the facilities were independent restaurant kitchens (75.0%) and hotel restaurant kitchens (25.0%).

#### **Forms of Biological Hazards Faced by Staff of Hotel and Independent Restaurant Kitchens**

Table 13, shows the biological hazard that could cause acute or chronic illness or diseases to the staff of restaurant kitchens in Accra. Table 13 shows that 21.3% of the respondents reported the presence of insects in the kitchens they worked. Out of this percentage, 51.5% of the staff were from the independent restaurant kitchen. Just 15.0% and 1.6% of the staff also felt the presence of mice and cats respectively in the restaurant kitchens.

Between the two restaurant kitchens, there were as many as 79.2% of the independent restaurant staff reporting the presence of mice in the kitchens compared to 60.0% of the staff who encountered the presence of cats in hotel kitchens. The results show that there were more insects and mice in the independent restaurant kitchens than in the hotel kitchens. Having less number of insects and mice in the hotel kitchens might be attributed to the possibility that because of the accommodation section of the hotels, management has been



fumigating the facilities regularly to eradicate the mice and insects which could be irritating to their guest.

**Table 13: Forms of Biological Hazards Faced by Kitchen Staff in Hotels and Independent Restaurants**

Hazards	Overall		HR		IR	
	Freq (N = 320)	% (100)	Freq (N = 182)	% (56.9)	Freq (N = 138)	% (43.1)
Presence of insects in the kitchen	68	21.3	35	48.5	33	51.5
Presence of mice in the kitchen	48	15.0	10	20.8	38	79.2
Handle animal blood with uncovered cuts/bruises on your hand	10	3.1	5	50.0	5	50.0
Handle mouldy/fungus food with uncovered cuts/bruises on the hand	9	2.8	4	44.4	5	55.6
Handle meat, eggs or fresh milk with uncovered cuts/bruises on hand	7	2.5	3	57.1	4	42.9
Presence of cat(s) in the kitchen	5	1.6	2	60.0	3	40.0

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at least one of the five hazards in the kitchen

### Summary

The chapter discussed the respondents' profiles and the types of hazards faced by the respondents. The study reported five main hazards (physical, chemical, ergonomic, psychosocial, and biological hazards) encountered by the

restaurant kitchen staff in Accra. Physical hazard was ascertained as the leading hazard encountered among the respondents in the restaurant kitchens. The hierarchy of the type of hazard faced by staff in the restaurant kitchen against the other was also explored. The relationship between the types of hazards and the respondents' profile were also explored. Gender and staff positions in the restaurant kitchens had a statistically significant relationship with the hazards present in the restaurant kitchens.



## CHAPTER SIX

### MEASURES TO ENSURE SAFETY AND HEALTH IN RESTAURANT KITCHENS

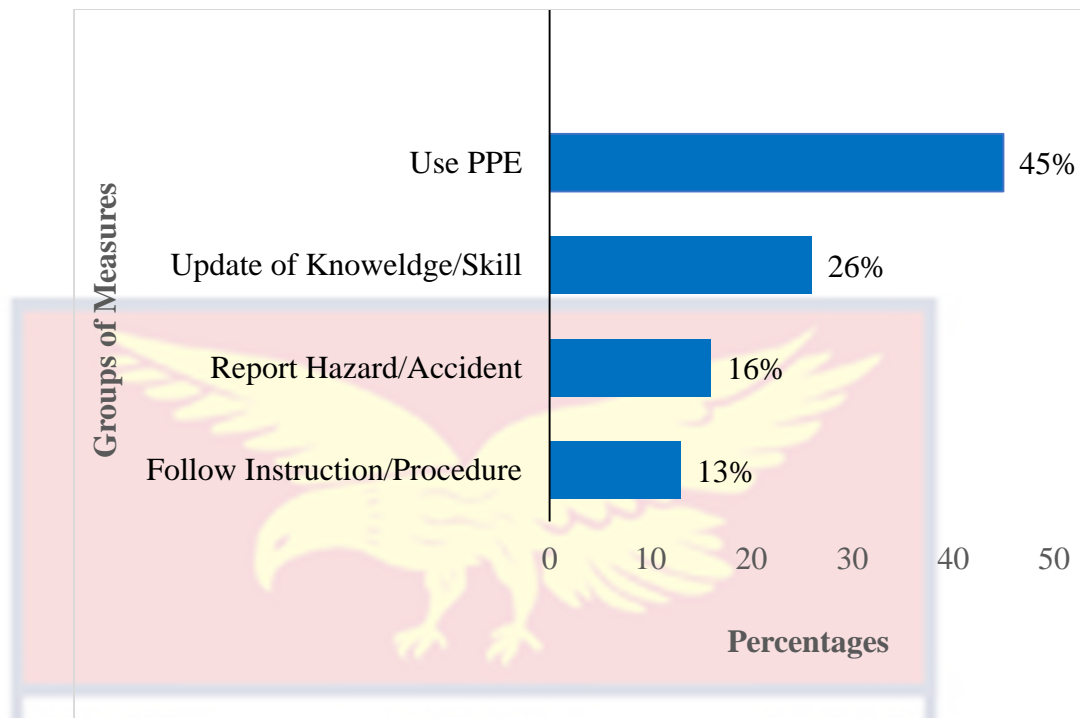
#### **Introduction**

This chapter presents the measures carried out by both staff and management to prevent or control hazards in restaurant kitchens. The results were based on data collected from the kitchen staff and management, as well as observations made in the facilities. The first section reports on the measures taken by staff to ensure a safe and healthy kitchen environment whereas the second section focused on the measures implemented by management to protect their kitchen staff from harm.

#### **Measures Employed by Kitchen Staff to Ensure Safety and Health**

Like all workers, restaurant kitchen staff are required by law to take safety and health measures to protect themselves and their colleagues from harm. Figure 7, presents the measures carried out by the kitchen staff to ensure their safety and health in the discharge of their work. Mainly, there were four safety and health measures carried out by the kitchen staff. These ranged from an update of knowledge and skills on safety and health (training), use of PPE, reporting hazards/accidents, and following instructions/procedures.

On the whole, the use of PPE played out to be the safest and healthiest measure carried out by the respondents in the kitchens (45.0%). Update of knowledge and skills on safety and health was the second leading safety and health measure carried out by the staff (26.0%). This was followed by the practice of reporting hazards/accidents which supervened as the third measure



*Figure 7: Measures Employed by Kitchen Staff*

Source: Field survey, (2021)

(16.0%). The least of the measures that were carried out by the respondents was following instructions/procedures which constituted 13.0%. The finding of the use of PPE emerging as the most common safe and healthy measure carried out by kitchen staff is consistent with the observation made by Rajini et al. (2012) in their study among hotel kitchen staff in Sri Lanka.

### **Socio-demographic Characteristics and Safety and Health Measures**

#### **Adopted by Kitchen Staff**

This section examines the measures carried out by staff in ensuring safety and health in the restaurant kitchens by their socio-demographic characteristics including gender, age, marital status, and educational attainment (Table 14). The Chi-square Test of Independence was used to explore the relationship between the variables.



**Table 14: Socio-demographic Characteristics and Safety and Health Measures Employed by Kitchen Staff**

Characteristics	Measures of safety and health (%)				$\chi^2$	p-value
	UKS	UPPE	RHA	FIP		
Gender					0.69	0.876
Male	26.1	44.2	16.4	13.3		
Female	25.0	45.1	16.2	13.7		
Age					5.95	0.114
< 35 years	25.2	44.3	16.0	14.5		
35 & above	26.3	45.5	16.9	11.4		
Marital status					11.84	0.066
Unmarried	25.2	44.6	16.2	14.1		
Married	26.2	44.8	16.4	12.5		
Level of Education					4.09	0.849
Basic Education	29.9	42.6	17.8	9.7		
Secondary Education	24.4	45.2	16.1	14.4		
Tertiary Education	27.5	43.8	16.3	12.5		

Source: Field survey, (2021)

NB: UKS.; Update of knowledge and skill; UPPE.; Use of personal protective equipment; RHA.; Report hazards/accidents; FIP.; Follow instructions/procedures.

Note: significant value at  $p < 0.050$

\*=significant at  $p < 0.05$

As indicated in Table 14, no statistically significant relationship was found across any of the variables. These results are different from Kyalo's (2016), study which established a significant relationship between age, gender and the use of PPEs among food industry workers in Nairobi.

Although no statistically significant relationship was established across the variables, it emerged from the results (Table 14) that the use of PPE was a

common safety and health measure adopted by all the categories of respondents. For example, within gender, PPEs were mainly used among 44.2% of the male kitchen staff. Twenty-five percent of the female staff primarily used PPEs in ensuring safety and health in the kitchens. The use of PPEs as the main safety and health practice among the female respondents corresponds with Kyalo's (2016), study which also found the use of PPE as a common safety and health measure adopted by food industry female staff.

Following safety and health instructions and procedures was observed among 13.7% of the restaurant's female kitchen staff compared to the practice of updating knowledge and skill (25.0%) and reporting hazards or accidents (13.7%). Following safety and health instructions and procedures being the least safety and health measure adopted by the female staff in the restaurant kitchens contradicts Gyekye and Salminen's (2011) assertion that female employees follow safety and health procedures more in workplaces.

In terms of education, PPEs were mostly used by the respondents with Secondary Education (45.2%), Tertiary Education (43.8%), and those with Basic Education (42.6%). Following safety and health instructions and procedures in the restaurant kitchens was observed by 14.4% of the staff with Secondary Education, 12.5% of those with Tertiary Education and 9.7% of the staff with Basic Education. For the respondents with Basic Education not engaging much in following safety procedures in the restaurant kitchens is expected as per their level of education, there is a tendency for them to have difficulty in easily understanding the given instructions and procedures. Therefore, having more safety and health training is very important as it will

help them to have more knowledge about workplace hazards and the possible ways to prevent and control them from causing harm

### **Employment and Facility-Related Characteristics and Safety and Health Measures Adopted by Kitchen Staff**

Table 15, shows the measures carried out by staff in ensuring safety and health in the restaurant kitchens by the employment and facility-related characteristics. The Chi-square Test of Independence was again used to specifically examine the relationship between the safety and health measures carried out by the kitchen staff and employment and facility-related characteristics like type of restaurant kitchen, grade of hotel, grade of the restaurant, years of operation of hotel/restaurant, mode of employment, position and work experience.

As indicated in Table 15, there is no statistically significant relationship established across all the variables except among the grades of hotel restaurants ( $\chi^2 = 12.58$ ;  $p = 0.050$ ). The difference as established by the Chi-square Test of Independence Post hoc is between the Upmarket hotel kitchen staff who updated their knowledge and skills on safety and health measures and those who reported hazards and accidents to their superiors. The significant relationship found only between grades of hotel restaurants and safety and health measures employed by the restaurant kitchen staff contradicts Kaylo's (2016), study that revealed a significant relationship between staff usage of PPE and work experience in food industries in Nairobi.

**Table 15: Employment and Facility-Related Characteristics and Safety and Health Measures Employed by Staff**

Characteristics	Measures of safety and health (%)				$\chi^2$	p-value
	UKS	UPPE	RHA	FIP		
Type restaurant kitchen					4.34	0.227
Independent restaurant	25.2	43.6	16.9	14.4		
Hotel restaurant	25.9	46.0	15.6	12.5		
Grade of Hotel					12.58	0.050
Upmarket hotels (3-5)	27.0*	46.7	16.3*	10.0		
Two-Star	26.5	44.7	16.0	12.8		
One-Star	21.1	48.5	12.3	18.1		
Grade of Restaurant					5.05	0.538
Grade 1	24.7	43.2	15.9	16.3		
Grade 2	26.2	43.9	15.8	14.0		
Grade 3	24.0	43.3	19.3	13.3		
Years of operation of hotel/restaurant					3.40	0.757
<10 Years	24.3	44.8	16.1	14.8		
10-19 Years	26.0	44.5	16.0	13.5		
20 & above	26.0	44.8	16.9	12.3		
Mode of Employment					1.58	0.663
Permanent	25.7	44.7	16.2	13.3		
Temporal	23.8	44.2	16.7	15.3		
Position in kitchen					2.14	0.906
Chef	26.7	43.2	16.5	13.6		
Cook	24.9	45.7	15.9	13.4		
Kitchen Assistant/Steward	24.9	44.4	16.9	13.7		
Work experience					1.87	0.601
< 10 Year	25.4	44.5	16.2	13.9		
10 & above	26.1	45.4	16.7	11.8		

Source: Field survey, (2021)

NB: UKS.; Update of knowledge and skill; UPPE.; Use of personal protective equipment; RHA.; Report hazards/accidents; FIP.; Follow instructions/procedures

Note: significant value at  $p < 0.050$

\*Cells that produced the statistically significant difference (using critical value of  $\pm 1.96$ )

From the analysis, it was observed that the respondents working in the Upmarket hotel (46.7%) mainly adopted the use of PPEs in ensuring safety and health. This was followed by the measure of update of knowledge and skills



(about 27.0%) and reporting of hazards and accidents (16.3%). Respondents in the One-Star hotel kitchens (48.5%) and those working in the Two-Star hotel kitchens also used mainly PPE over other safety and health measures in the course of discharging their duties.

### **Specific Measures Undertaken by Staff to Ensure Safety and Health in the Hotel and Independent Restaurant Kitchens**

With regards to the specific measures carried out by the kitchen staff, Table 16 shows that more than half of the respondents carried out most of the safety and health measures in the restaurant kitchens. In the area of using PPE, Table 16, reveals that almost all the kitchen staff covered their heads (95.6%) and also wore aprons (95.4%) while at work. Gloves were also worn by 59.4% of the respondents in the kitchen. With these proportions of respondents using these protective clothing, the table further shows that more than half of the independent restaurant kitchen staff used aprons (57.0%), head covers (57.2%), gloves during the discharge of their duties were similar to the practices carried out among food production staff engaged in a study conducted by Joshua et al. (2017).

**Table 16: Forms of Safety and Health Measures Undertaken by Staff in the Hotel and Independent Restaurant Kitchens**

Safety and health measures	Overall		HR		IR	
	Freq (N = 320)	% (100)	Freq (N = 182)	% (56.9)	Freq (N = 138)	% (43.1)
Use of personal protective equipment						
Use apron in the kitchen	305	95.3	131	43.0	174	57.0
Use head covers in the kitchen	306	95.6	131	42.8	175	57.2
Use a face/nose mask	268	83.8	114	42.5	154	57.5
Wear non-slippery shoes in the kitchen	212	66.3	110	51.9	102	48.1
Use gloves in the kitchen	190	59.4	91	47.9	99	52.1
Use appropriate personal protective equipment	189	59.1	102	54.0	87	46.0
Use ear muffs when using noisy appliances	2	0.6	0.0	0.0	2	100.0
Update knowledge and skill on safety and health						
Attend induction training on general control of hazards	242	75.6	105	43.4	137	56.6
Attend training on safe use of personal protective equipment	229	71.6	132	57.6	97	42.4
Attend training on drills for fire evacuation	197	61.6	94	47.7	103	52.3
Attend training on how to administer basic first aid	91	28.4	44	48.4	47	51.6
Attend training on electrical safety	82	25.6	43	52.4	39	47.6
Report hazards/accidents						
Report any hazard, unsafe act or conditions that exist in the kitchen	275	85.9	121	44.0	154	56.0
Report any form of accident or injury that occurs in the kitchen	262	81.9	109	41.6	153	58.4
Follow instructions/Procedure						
Follow safety procedures when discharging duties	223	69.7	93	41.7	130	58.3
Comply with instructions on safety and health matters	223	69.7	91	40.8	132	59.2

Source: Field survey, (2021)

NB: HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who adopted a safety and health measure in the kitchen and gloves (52.1%) for their work. The finding on staff wearing aprons and

Using appropriate PPE for a task is indeed a very important measure set to control hazards to prevent unnecessary injuries in restaurant kitchens. As evident in Table 16, around 59.0% of the kitchen staff indicated that they used protective equipment properly. Between the two groups of restaurants, the use of appropriate PPE was identified more by the hotel restaurant kitchen staff (54.0%) than their counterparts in the independent restaurants. The confirmation of some of the staff using appropriate protective equipment and others not complying with the directive in this study is demonstrated in plate 1.



**Plate 1: Clothing Used by Staff in the Restaurant Kitchens**

Source: Field survey, (2021)

The first picture in Plate 1 gives an evidence of staff who used the appropriate protective equipment in the course of working in the restaurant kitchen. Picture 2, 3, 4, 5 and 6 also show the use of inappropriate clothing by the kitchen staff. These clothes are considered inappropriate because they do not have any sleeve protection to help shield the forearm of the staff from flames. The apron was also not a water-proof type that could protect the staff from burns from hot water. The pair of gloves used by the staff in picture 3 was not a cut-resistant glove but a mere synthetic rubber glove that cannot protect her fingers from the sharp blades of kitchen tools.

For the staff who were not using the appropriate protective clothing in the course of their duty, the consequence of their action is that there is a likelihood of them exposing themselves and their colleagues to risks and this may result in work-related injuries and illnesses. A possible explanation for these unsafe actions of the staff is that management is probably not effectively enforcing or instructing the staff to comply with the use of the appropriate protective equipment. The finding of staff using appropriate protective clothing in the course of discharging their study is in contrast to the observation made in a study carried out in Chinatown in San Francisco, where wearing appropriate protective clothing was not identified as a typical practice among around 90.0% of the restaurant kitchen staff (Gaydos, et al., 2011).

Further on the use of PPEs, the evidence from Table 16, revealed that 66.3% of the respondents used non-slippery shoes in the kitchens to prevent falls which could lead to injuries. From the results, it was revealed that slightly above half (51.9%) of the respondents who used the non-slippery foot wears were from the hotel restaurant kitchens. The footwear used ranged from shoes,



slippers, and sandals. Although the footwear was branded as non-slippery, the slippers and sandals were not suitable to prevent injuries because of the openings on them. The openings expose the skin of the feet of workers to hot liquids. Examples of the footwear worn by the respondents are shown in plate 2.

2.



**Plate 2: Footwear Worn by Restaurant Kitchen Staff**

Source: Field survey, (2021)

Concerning the use of face/nose masks, the result shows that nearly 84.0% of the kitchen staff reported that they wore nose masks while at work. Between the two sets of restaurants, the percentage (57.5%) of the independent

restaurant kitchen staff who used the nose mask was more than the hotel staff (42.5%). However, from what was observed in the kitchen, some of the staff sighted in masks in the hotel restaurant kitchens were not wearing them properly as prescribed by health experts. The masks were seen either beneath the nose or the chins of the staff instead of it covering the whole portion of the nose through to the chin as evidenced in Plate 3.



**Plate 3: Staff in Nose/Face Masks in the Restaurant Kitchen**

Source: Field survey, (2021)

This improper practice of staff wearing the mask below their nose or chin was quite risky for their safety and health as it had the potential of exposing them to the COVID-19 virus and other harmful substances such as dust, fumes, or smoke that emanant from the kitchen. The finding of having the majority of

respondents use a face mask is similar to the observation made by Joshua et al. (2017) in Nigeria.

Regarding the use of ear muffs, the results revealed that the use of this protective equipment was not given much priority by the kitchen staff (0.6%), even though the use of metal cutlery, cooking pots, and electromotive-driven kitchen devices such as blenders and mixers which generate loud noise (Fischer et. al., 2014) were common practices in the kitchen. Although the use of ear muffs was an uncommon practice among the restaurant kitchen staff, all the respondents (100.0%) who used the device were from the hotel restaurant kitchens compared to independent restaurant kitchens where none of the staff were found to have used the device in the course of their work. Possible explanations for not using this device are that maybe the staff were ignorant of their importance or that management did not provide them for the staff to use. The finding matches the observation made by Bonsu et al. (2020) in a study involving similar respondents who also failed in the use of ear muffs in the discharge of their work.

Concerning staff updating their knowledge and skill or undergoing safety and health training which is classified as a tool for creating awareness (Cherono, 2011), about 76% of the staff indicated they had attended training on general control of hazards in the restaurant kitchen through induction training. From the result, this form of training was mainly acquired by 56.6% of the independent restaurant kitchen staff. This finding suggests that the independent restaurants are comparatively organizing more induction training on general control of hazards for their kitchen staff than the hotel restaurants. The finding of the kitchen staff attending training on general control of hazards is consistent

with Maseko's (2016) study where similar respondents were reported to have received induction training on rules guiding general workplace safety and health in South Africa.

Still on staff training, attending training on the safe use of PPE (71.6%) and drills for fire evacuation (61.6%) were reported by the majority of the respondents. Attending training on the safe use of PPE was very common among the hotel restaurant kitchen staff (57.6%) than the independent restaurant staff (42.4%). The finding on the use of PPE among kitchen staff in Accra contradicts what was revealed by Maseko (2016) in a study where 41.1% of workers within a similar work setting had undertaken such training in South Africa.

Another important area a worker needs training is on how to administer basic first aid. From the analysis, it was realized that less than one-third (28.4%) of the staff had acquired such training. This can be said to be a deviation from the standard. As suggested by Mahmoud and Elsayd (2013), everybody has the potential to save a life. Hence, acquiring first aid training is one of the competencies a kitchen staff must have to save lives in times of danger. This observation of a least number of respondents acquiring training on how to administer basic first aid is in contrast with findings made by previous researchers such as Cheronno (2011), Kivlehan (2005), and Senya (2017). In these studies, most food production staff were reported to have acquired training in first aid administration. Comparing the types of restaurant kitchens, Table 16, reveals that most (51.6%) of the respondents from the independent restaurants had gained knowledge in basic first aid administration and have the potential to save lives in their workplace more than those in the hotel restaurants (48.4%).



Employees complying with safety instructions and following safety procedures are important to help prevent accidents leading to injuries or harm. Table 16, shows that nearly 70.0% of the staff claimed they obeyed instructions on safety and health matters given by their employers. Another, 70.0% of them indicated that they followed safety procedures while discharging their duties in the kitchens. This finding suggests that few (about one-third) of the restaurant kitchen staff in Accra refrained from following safety and health instructions and procedures. The actions of these respondents could be said to be threatening as they might be prone to errors that could affect the safety and health of the facilities.

A further obligation of staff in ensuring safety and health in the restaurant kitchens is the need to report to their superiors any situation that presents imminent and serious peril to their lives in the working environment. From the results, more than three-fourths (85.9%) of the respondents informed their leaders of existing hazards in the kitchens. About 82.0% of them also indicated they did report any form of accident or injury that occurred in the kitchen.

These findings imply that aside from the staff perhaps being aware of the directives of Ghana Labour law and the International Labour Organization on their duties and responsibilities in ensuring their safety and health in the kitchens, there might also be rooms created for the staff to easily report the hazards, accidents, and injuries to their superiors without any fear of losing their job. The finding of more staff reporting the presence of hazards in the kitchens was at variance with Maseko's (2016) study that observed low compliance with this measure in a related study conducted in South Africa.

## Measures Implemented by Employers to Ensure Safety and Health in the Restaurant Kitchens

The Ghana Labour Act (Act 651), entreats all employers to provide satisfactory, safe, and healthy working conditions for all their employees at all workplaces including hotels and restaurants. Based on the field observations and interviews with managers of both hotel and independent restaurants, the efforts of employers to ensure the safety and health of staff were determined and the details presented in Table 17.

As evident in Table 17, the hotels and restaurants ensured the safety and health of their kitchen staff mainly in the area of electrical safety (91.1%), followed by issues on welfare (84.0%), falls and cuts & accident records (70.6%), firefighting and evacuation (69.4%), ergonomic (58.8%) and ventilation/lighting and sound-absorption (51.5%). Measures on first aid/medical assistance were implemented by just 30.6% of the facilities. In gauging these measures across the two facilities, it is evident that the independent restaurants were more eminent in ensuring the safety of their staff in the area of electrical safety (60.0%) firefighting and evacuation (56.0%) and ventilation/ lighting and sound-absorption (51.3%) than the hotel restaurants.

Specifically, on measures of first aid/medical assistance, Table 17, shows that almost all (98.9%) restaurant kitchens had first aid boxes. However, a little above one-third (37.2%) of the facilities had fully stocked the first aid boxes with medical items. Between the two types of facilities, the independent restaurants had most of the first aid boxes (51.6%) compared to the hotels

**Table 17: Existing Safety and Health Measures in Hotels and Independent Restaurant Kitchens**

Safety and health measures	Overall		HR		IR	
	Freq (N = 94)	% (100)	Freq (N = 46)	% (48.9)	Freq (N = 48)	% (51.1)
First aid/medical assistance						
Availability of first aid kit box	93	98.9	45	48.4	48	51.6
First aid kit box fully stocked	35	37.2	25	71.4	10	28.6
Availability of first aider	18	19.1	11	61.1	7	38.9
Availability of medical room/onsite clinic	2	2.1	1	50.0	1	50.0
Overall Percentage		30.6		52.1		47.9
Firefighting and evacuation						
Positioning of gas cylinders outside kitchen environment	92	97.9	46	50.0	46	50.0
Availability of fire blanket	76	80.9	40	52.6	36	47.4
Availability of emergency exits	74	78.7	35	47.3	39	52.7
Availability of fire extinguishers	73	77.7	26	35.6	47	64.4
Availability of fire alarms	51	54.3	24	47.1	27	52.9
Availability of smoke detectors in the kitchen	47	50.0	22	46.8	25	53.2
Directional signs to emergency routes	41	43.6	29	70.7	12	29.3
Availability of emergency assembly point	41	43.6	27	65.9	14	34.1
Availability of bucket of sand	8	8.5	4	50.0	4	50.0
Overall Percentage		69.4		44.0		56.0
Falls and cuts & accident records						
Floors not slippery	90	95.7	45	50.0	45	50.0
Exits free of obstacle obstructing movement	89	94.7	44	49.4	45	50.6
Walkways free of obstacle obstructing movement	86	91.5	44	51.2	42	48.8
Safe storage of stock or cooking equipment	76	80.9	29	38.2	47	61.8
Warning signs displayed	75	79.8	39	52.0	36	48.0
Labels on walkways	58	61.7	27	46.6	31	53.4
Availability of occupational accident/illness book on site	32	34.0	10	31.3	22	68.8
Appropriate storage places for sharp tools	29	30.9	15	51.7	14	48.3
Availability of hand-rails on staircases	25	26.6	14	56.0	11	44.0
Overall Percentage		70.6		51.1		48.9

Table 17: Cont.

Welfare issues						
Good housekeeping (tidy kitchen environment)	89	94.7	45	50.6	44	49.4
Good drinking water for workers	88	93.6	44	50.0	44	50.0
Separate washrooms for male and female workers	60	63.8	25	41.7	35	58.3
Overall Percentage		84.0		51.1		48.9
Ventilation/ lighting and sound-absorption						
Well ventilated kitchen (Adequate air circulation – opened windows)	80	85.1	39	48.8	41	51.2
Presence of ventilation hood/heat extractors	62	66.0	24	38.7	38	61.3
Well illuminated kitchen without glare	51	54.3	25	49.0	26	51.0
Isolate noisy appliances and procedures from entire kitchen environment	26	27.7	17	65.4	9	34.6
Sound-absorbing panels used on ceilings, walls or floors	23	24.5	12	52.2	11	47.8
Overall Percentage		51.5		48.7		51.3
Ergonomic safety						
Spacious working environment	83	88.3	43	51.8	40	48.2
Proper layout or arrangement of kitchen	76	80.9	32	42.1	44	57.9
Staff use devices for lifting/moving heavy objects/loads	45	47.9	21	46.7	24	53.3
Availability of ladder to reach objects at height	17	18.1	7	41.2	10	58.8
Overall Percentage		58.8		52.3		47.7
Electrical safety						
No overloading of electrical sockets	93	98.9	46	49.5	47	51.6
No visible electrical wires	91	96.8	44	48.4	47	51.6
Free access to fuse boxes by staff	73	77.7	36	49.3	37	50.7
Overall Percentage		91.1		40.0		60.0

Source: Field survey, (2021)

NB: HR.; Hotel Restaurant; IR.; Independent Restaurant



(48.4%). However, fully stocking the first aid boxes was sighted more in the hotels (71.4%) than the independent restaurants (28.6%). The results of the hotels and restaurants having first aid boxes available in their facilities are consistent with what was recorded in other studies (Cherono, 2011; Kivlehan, 2005; Senya, 2017; Tak, 2016). Examples of the first aid boxes identified in the restaurant kitchen are displayed in Plate 4. As displayed in Plate 4, all the first aid boxes had noticeably written inscriptions as required by law.



**Plate 4: First Aid Boxes**

Source: Field survey, (2021)

Plate 5, also displays the various medical kits stocked in the first aid boxes identified in the hotels and restaurants. Between the two restaurant kitchens, it is worth indicating that, the first and second or top images were

exhibits from the hotel restaurants and the third and fourth were captioned from the independent restaurants. Although there are medical items in all the boxes, the finding portrays a picture of the inadequacy of the medical materials stocked in the boxes. However, the finding suggests that the stocking of the first aid boxes was better done in the hotels than in independent restaurants.



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### Plate 5: Stocked First Aid Boxes

Source: Field survey, (2021)

Again, on the issue of first aid, the observation made showed that almost all the first aid boxes meant for treating the injured in the kitchens were kept in the managers' offices. These offices were either located on the same floor as the

kitchens or just beneath the floors of the kitchen. This practice of keeping the first aid kits in the managers' offices implied that, when a staff gets injured, he/she has to go or be taken to the managers' office for treatment. A reason assigned for this practice was cited by a manager as follows:

*Oh, the first aid kits are kept in my office just to help in the monitoring of their usage. You know if the kits are close to the workers, they misuse them or pick some of the items home. Keeping the kits here in my office on the other hand helps me to know the rate at which the workers get injured at work (A 2 Star hotel restaurant manager).*

Aside from the first aid boxes, about 19.0% of the independent restaurants and hotels had first aiders who were involved in providing emergency treatments to the injured staff. From the results, there were more first aiders in the hotel restaurants (61.1%) than in the independent restaurants (38.9%). The finding of the availability of first aiders in the hotels and restaurants reinforces the low percentage (17.6%) of first aiders that were reported in a study conducted by Senya (2017), among hotels in Accra but, is different from the outcome of Cheronno (2011), study where 37.0% of hotels in Eldoret in Kenya were reported to have had first aiders.

In addition to the availability of first aiders, about 2.0% of the facilities were noted to own medical rooms for the treatment of injured persons. These medical rooms as evident in Table 17, were equally noted in both a hotel (100.0%) and an independent restaurant. With regard to the existence of medical room/onsite clinics in the hotels and restaurants, the finding is invariance to the

observation made in other studies carried out by Maseko (2016), and Senya (2017), where the onsite clinics were well-sighted among similar facilities.

It emerged from the interviews with the managers that some facilities relied on first aiders to administer first aid to the injured whilst others depended on their staff for treating the sick and injured, even though they had not acquired any training on the administration of first aid. In other instances, the managers or team leaders were in charge of treating the injured. These findings are confirmed in the following comments:

*We have people who are trained. We have nurses around.*

*They are there to attend to them when they are hurt. They are employed and are paid monthly by the facility in this regard. (A Grade 3 restaurant manager)*

*I attend to them (injured staff) myself. I had a little training on first aid from South Africa and that is what I apply to treat them when they get injured. Aside from this we also have a deal with a pharmacy that offers such assistance to the injured at a fee paid by the management. The pharmacy is just a stone thrown away from our restaurant and depending on the degree of injury, the pharmacist either comes to the facility or the injured is carried there for treatment. (A Grade 1 restaurant manager)*

*My staff treats herself even though, she had not acquired any training in the administration of first aid. The issue is if nothing at all, everyone has basic knowledge of how to stop bleeding when there is a cut. So, she does that and she*



*is fine* (A Grade 3 restaurant manager).

*In this hotel, team leaders are in charge of taking care of injured workers. In every department, there is a team leader who has been given some form of first aid training to help treat injured workers before taking them to the clinic or hospital. In the absence of a department team leader, another department team leader is called to attend to the injured.* (A 2 Star hotel manager).

Other practical steps required of employers to protect employees from the risk of personal injury is about the prevention of fire outbreaks. In preventing fire in the kitchen, Ghana Fire Service always advises that all gas cylinders used for cooking should be positioned outside the kitchen environment. Table 17, revealed that about 98.0% of the facilities adhered to this advice and kept the gas cylinders outside the restaurant kitchen. (See Plate 6). Relatively, having gas cylinders outside the cooking area was evenly noticed in the hotel (50.0%) and independent (50.0%) restaurants.



**Plate 6: Gas Cylinders Positioned Outside the Kitchen Environment**

Source: Field survey, (2021)

To control the spread of fire in the kitchen, about 81.0% of the restaurant kitchens had in place fire blankets for that purpose. An example of a fire blanket spotted during the observation is displayed in Plate 7. In contrast, only around 9.0% of the restaurant kitchens were found with buckets of sand as a means to control outbreak of fire. This finding suggests that the use of sand as a first-line measure of fighting fire is downplayed among the facilities even though, sand is a very common and the cheapest firefighting material to be acquired in Accra. This might be a result of staff being familiar with the use of sand as a firefighting material or that they felt it was an antediluvian way of fighting a fire in this modern day.



**Plate 7: Fire Blanket**

Source: Field survey, (2021)

Another means of controlling fire before it escalates in the kitchen is through the use of fire extinguishers. It was observed that fire extinguishers were available in 77.7% of the restaurant kitchens. The distribution of extinguishers among the facilities were independent restaurant kitchens (64.4%)

and hotel restaurant kitchens (35.6%). As apparent in Plate 8, the extinguishers were in different sizes ranging from 2kg to 10kg. This suggests that while some of extinguishers were small and could be carried and used by only one person, others were big, as such, were to be lifted and used by more than one person.



**Plate 8: Fire Extinguishers Used in Restaurant Kitchens**

Source: Field survey, (2021)

This further implies that in times of fire outbreak in the kitchens, it might not be easy for the big extinguishers to be used by just an individual without help from another person. The bigger fire extinguishers were predominantly available in the hotel restaurants than in the independent restaurants. Concerning the expiry dates of the fire extinguishers, it was observed that the

expiry dates of the devices had not elapsed, as some of them had about eight to nine months before expiration.

Additionally, looking at the facility's preparedness and response in line with fire evacuation, the field observation showed that 78.7% of the facilities had emergency exits to help save the lives of the kitchen staff when there is a fire outbreak. In terms of fire alarms and emergency assembly points, about 54.0% and 44.0% of the facilities respectively were noted to possess them. In addition, 50.0% of the restaurant kitchens were fitted with smoke detectors. The percentage of facilities found to have had emergency exits among the hotels and restaurants is similar to the percentage reported by Senya (2017), in a study on hotels in Accra.

With measures in place to prevent falls and cuts, it was observed from the field exercise that 91.5% of the walkways and 94.7% of the exits of the hotel and independent restaurants were without obstacles that might obstruct movement. About 80.0% of the facilities had also displayed warning signs to guide the movements of the kitchen staff. Labels on walkways were noticed among 61.7% of the facilities. The availability of handrails on stairs to guide movements was also identified in about a quarter (26.6%) of the facilities. Safe storage of stock or cooking equipment was evident in 80.9% of the kitchens. As evident in Table 17, about 96.0% of the restaurant kitchens had non-slippery floors. This, therefore, suggests that there was little chance of staff falling easily in the restaurant kitchens.



In keeping records of accidents in the restaurant kitchens, which are very important in risk assessments in the facilities, it was observed that over a third (34.0%) of the facilities had an accident/illness book on site. The books were available in independent restaurants (68.8%) than in hotel restaurants (31.2%). The finding is in contrast to the low number recorded by Cherono (2011), in hotels in Eldoret in Kenya.

On matters regarding ventilation, 85.1% of the restaurant kitchens were well ventilated as there was adequate air circulation through existing windows. There was also the presence of ventilation hood/heat extractors in 66.0% of the facilities with the following distribution; independent restaurants (61.3%), and hotel restaurants (38.7%). This finding shows that there was more ventilation hood/heat extractors in the independent restaurant kitchens than in the hotel kitchens. Yet, from the field observation, it was revealed that the hotel restaurants had bigger ventilation hoods/heat extractors in their facilities. An example of such a ventilation hood is displayed in Plate 9.



**Plate 9: Ventilation Hood in a Hotel Restaurant Kitchen**

Source: Field survey, (2021)

Sound absorption was another measure observed in the restaurant kitchens. As shown in Table 17, only 27.7% of the restaurant kitchens made room for noisy appliances and procedures to be isolated from the entire kitchen environment and 24.5% had sound-absorbing panels used on ceilings, walls, or floors. The isolation of noisy appliances and procedures from the entire kitchen environment was more (65.4%) evident in hotel restaurants than independent restaurants (34.6%). The findings suggest that generally most of the facilities were subjecting their staff to loud noise and this happening, the staff was likely to suffer hearing difficulties.

On matters of ergonomic safety, as much as 88.3% of the restaurant kitchens were looking spacious for the staff to work comfortably and 80.9% also had a proper layout or arrangement of the kitchens. Less than half (47.9%) of the facilities had devices for lifting or moving heavy objects or loads to and from the kitchen. Examples of such devices are shown in Plate 10. For the facilities which did not have these heavy object lifting devices, the repercussion is that their staff were subjected to ergonomic hazards which could lead to musculoskeletal disorders.

On a lower note, the availability of ladders to reach objects at a height was also observed among just less than one-fifth (18.1%) of the facilities. Notably, the ladders were seen in the hotel restaurants. This was expected as most of the kitchens had the equipment and food stock kept within the reach of their staff.



**Plate 10: Devices for Lifting or Moving Heavy Objects in and out of the Restaurant Kitchens**

Source: Field survey, (2021)

On measures concerning electrical safety, Table 17 shows that the restaurant kitchens were doing better. Almost all the kitchens were not found with the situation of overloading electrical sockets (98.9%) and the majority (96.8%) of electrical wires were not exposed. About 78.0% of the kitchens allowed fuse boxes to be accessible to their staff. This was to help the staff control hazards caused by electrical faults early enough in the kitchens.

An additional requirement of employers in a workplace is their role in promoting the welfare of the staff. As evident in Table 17, 93.6% of the restaurant kitchens provided good drinking water for their staff. It was noted that while the restaurant facilities provided their staff with sachet water (pure water), the hotel restaurants provided bottled water to be dispensed by the staff themselves.

Apart from the provision of drinking water, it was observed that 63.8% of the hotel and independent restaurants provided separate washrooms for their workers. This implies that the staff in these facilities were not sharing common washrooms with the guest or customers. It was also observed that all the toilet facilities were water closets and there was water available for flushing. Some of the hotels and independent restaurants had separate washrooms for male and female staff as directed by the Labour Act of Ghana, (Act 651) and the Factories, Offices and Shops Act, (Act 328). While 58.3% of the independent restaurants were complying with this directive, 41.7% of the hotel restaurants were observing it.

The field exercise revealed an adherence of good housekeeping in the restaurant kitchens as closely 95.0% of the kitchens were looking tidy. This finding is consistent with Rajini et al. (2012) study which recorded the same percentage of hotels with good housekeeping in Sri Lanka. However, the finding is at variance with Meseko's (2016) study which documented poor housekeeping as the observation made among food and beverage industries in South Africa.

Other safety and health measures required to be carried out by the hotels and restaurants are in regard to having a safety and health policy, running risk assessment, providing safety and health training for staff, providing and maintaining equipment and machinery and supervision (Factories, Offices and Shops Act, Act 328, 197; Labour Act of Ghana, Act 651, 2003; ILO, guidelines, 2009).



### Availability of Occupational Safety and Health Policy

An employer in consultation with their employees and representation is expected to develop an occupational safety and health policy that should be specific to the organization and appropriate to the size and nature of its activities (ILO, 2009). This is to guide the organization in ensuring safety and health. The results of the responses of the Managers showed that some facilities were without occupational safety and health policies guiding their activities, while others had the policy. In the facilities which had the occupational safety and health policy, these were the remarks of some of the Managers:

*Yes, we have occupational safety and health policy guiding the activities of this hotel. This policy was put together with the involvement of our staff (A 2 Star hotel Manager).*

*We have in place an OSH policy committed to helping to ensure the safety and health of every member of this hotel.*

*In writing this policy, we did not engage our staff. We consulted the Red Cross Society, Public Health officials, the Fire Service personnel, and some other agencies for advice (A 2 Star hotel Manager).*

Concerning the facilities which did not have occupational safety and health policy, this was a quote from one of the managers:

*Hmmm, we do not have such a policy here in our restaurant as of now. We are working on it and it will be ready soon (A 2 Star restaurant Manager).*

### Provision of Protective Equipment for Use in the Kitchens

The International Labour Organization and Ghana Labour Act, (Act 651) further implore employers to provide appropriate equipment and tools for employees to work safely. According to the ILO (2009), such protective equipment and clothing should be provided at no cost to employees with measures implemented to help in their usage and maintenance. From the transcripts, provisions for two of the protective equipment namely; protective clothing and firefighting equipment were made.

Concerning the provision of PPE, the study revealed that while some employers regularly provided all PPE to their employees, others shared such responsibilities with their staff. In other instances, the provision of PPE was seen as the responsibility of the staff. For the employers who were fulfilling this obligation in full, these were what they said:

*I provide aprons and other clothing needed for use to my worker regularly at no cost to her. I do this anytime I see that the colour of the clothing has changed and is not presentable for use by the worker here in the hotel. (A 1 Star hotel manager).*

*We always provide our staff with all PPE in our facility every year. This is always done at no cost to any of the staff. The staff needs protective clothing for their safety and the protection of others. As such we make sure we supply them regularly. It is important (A 3 Star hotel manager).*

*We provide PPEs in this facility. For instance, in the food department, particularly in the kitchen where specific kinds of gloves, chef's jackets, and headgear are needed to be used by the staff to ensure their safety, the hotel buys and supplies them all to the workers. These clothing are supplied to the workers once every year or at any point in time that, we realize that the clothing is not safe for use by the worker (A 2 Star hotel Manager).*

With the employers who shared the responsibility of providing PPE with their staff, these were their responses:

*Management provides aprons and chef coats for the workers every six months free of charge. But the boots are bought by the staff themselves. (A Grade 3 restaurant manager)*

*We provide our staff with protective clothing once every year. But if in the course of the year a staff misplaces his/hers, that staff must buy it for use. (A 2 Star hotel manager).*

The instances where the staff shoulder the responsibility of acquiring their protective clothing are shown in the following quotes:

*Management does not supply personal protective clothing to staff nowadays. The staff is made to buy them for using themselves. (A Grade 3 independent restaurant manager)*

*The staff buy their clothing. For example, the white dress you see them wearing and the aprons and boots were the clothing they bought for themselves. (A Grade 3 independent restaurant manager)*

This finding of some facilities complying with the directive of providing PPE (clothing) to their staff and others not complying corresponds with the observation made by Cherono (2011) in a study which also suggested that not all hotels in Eldoret in Kenya carried out their mandate of supplying their staff with personal protective clothing.

With regard the firefighting equipment, these were comments from the study participants:

*We have provided fire extinguishers for the kitchen and as you can see, they are three in number and are in different sizes in this kitchen. They are also well-positioned for easy access in times of need (A 2 Star hotel manager)*

*Yes, we have firefighting equipment such as fire extinguishers here in this restaurant. These are regularly examined by the fire service personnel who visits once every year (A Grade 2 independent restaurant manager).*

*There are fire extinguishers, smoke detectors, and central alarm systems in this hotel. The fire extinguishers have expiry dates and once the dates are due, the extinguishers are changed (A 2 Star hotel Manager).*



### Organizing Safety and Health Training for Staff

Providing staff with training on occupational safety and health matters by an organization is not only an obligation but an important basic and cost-effective prevention measure in ensuring safety and health in a workplace (Cherono, 2011). Such training recounted by some previous studies (Kivlehan, 2005; Maseko, 2016) includes fire safety training, induction training on general workplace health and safety rules, appropriate use of catering equipment, first aid, and safe use of PPE. Concerning the area of safety and health training, how and the number of times such training was offered to the kitchen staff in the restaurant kitchens in Accra, these were the narratives of study participants:

*We do organize workplace safety and health training for our staff. In the last year, I mean the one before the COVID year, the fire service personnel were here to take the staff through fire prevention and control measures in the kitchen. Training on how to use gas and fire extinguishers were examples of such training the staff were taking through. This year we have invited them but they have not yet come to train the staff.*

*We sometimes invite the fire service ourselves without them coming here on their own accord. This is because fire outbreaks had been a major challenge in our facility. (A Grade 3 restaurant manager)*

*Management organizes training and it is organized every two years. We invite Public Health personnel to give training to our staff. We also invite Red Cross personnel or nurses to come and train the staff on how to administer first*

*aid. Fire service personnel also come in to take the staff through firefighting training (A 2 Star hotel manager).*

*Oh, such training takes place when fire service people come here for their routine inspection visits to the hotel. They take the staff through the firefighting process. They come every year but since the COVID started, they had not been here.*

*(A 1 Star hotel manager)*

*Oh yes, induction on general workplace health and safety has been conducted for staff. This training took place immediately after the workers were given employment in this facility. Experts were employed to offer this training to the staff. (A 3 Star hotel manager)*

The findings suggest that staff training on fire safety was the main area of concern in the hotels and restaurants. This might be linked to the fact that working with naked fire in restaurant kitchens is unavoidable. As such, with the use of inflammable materials like Liquefied Petroleum Gas (LPG) and cooking oils, there is the probability of a fire outbreak if staff do not carry out the right measures to prevent or control such occurrences. The finding on facilities conducting fire safety training for their staff was similarly mentioned by Kivlehan (2005), as a measure for ensuring safety and health among catering industries.

However, there were instances of opposing views by some study participants concerning the employer's role in organizing safety and training for their staff. One of such instances, reported by a participant is cited below:

*We have never organized such training you are talking about here. The only one that had taken place here was the one carried out by the Ghana Standard Authority people when they visited last two years. We have never organized training on first aid, or the use of PPE as you mention. (A Grade 3 restaurant kitchen manager).*

### **Maintenance of Equipment and Machinery**

Further on the measures to occupational safety and health, Act 651 of the Ghana Labour Act additionally, demands employers to maintain equipment and machinery to promote the safety of workers at work. Aside from being an obligation, some managers also saw it as an action that was to help increase production and help grow their facilities. The following quotes elucidate this view.

*We maintain our equipment and machines. If we don't do this what will the workers use to work for us to get our profits. We maintain them regularly. We even replace those that break down completely and we do this on time. (A Grade 1 restaurant manager)*

*We do maintenance. For instance, we have a guy who comes every six months to check on the gas pipes connected underground right from the kitchen to the cylinders outside. You know, aside from this helping to prevent fire in the facility, it helps the stoves to work well for a fast delivery too. (A 2 Star hotel manager).*

## Supervision

Supervising the activities of staff in the hotels and independent restaurants is important as this will help the kitchen staff to comply with the right measures required in ensuring safety and health in the facilities. From the transcripts, it was observed that the facilities carried out this directive as indicated in the Ghana Labour Act. Below are comments from the Managers:

*Yes, we do a lot of supervision. Right from the beginning of work till the end. But, how do we control a business without supervision? The workers will do what they want and things will go wrong. We supervise and we supervise a lot (A 3 Star hotel manager).*

*We do not compromise on the supervision of the activities of our kitchen staff. We supervise every bit of what they do to ensure a safe working environment (A Grade 1 restaurant manager).*

## Conducting Risk Assessment

The Labour Act of Ghana, (Act 651) further entreats employers to implement measures to minimize or prevent hazards in the workplace to avoid accidents leading to injuries to the workers. One such measure involves conducting a risk assessment. This assessment is a comprehensive examination of a workplace to identify situations or processes that may cause harm and put in measures to eliminate or reduce risk (Sinha, 2019). In finding out if this measure has been adhered to, it emerged from the transcripts that not all the facilities conduct the assessments. For the facilities that adhered to the directive, it appears the managers understand the risk assessments and have realized their



usefulness in the running of hotels and restaurants. In affirming this assertion, these were what some of the participants had to say:

*We carry out a risk assessment in this facility. Formerly we were not doing it and we were having a lot of fire outbreaks in the facility. Now we are seriously into it. One of the results of the risk assessment of our workplace is the introduction of charcoal to replace gas usage which had been the main cause of most of the fire outbreaks in the facility. You know, majority of our workers are people with no or low educational background who have weakness in the safe handling of gas for cooking. Sometimes, they forget to turn off the nobs of the stove while the gas cylinders were turned on. They could not follow safety procedures when handling gas in the kitchen. As such, we have stopped using gas in the kitchen and since then, our facility has not recorded any such events or fire outbreaks. (A Grade 3 restaurant manager)*

*We do a risk assessment. Through the risk assessment carried out in our facility, we have now changed a slippery floor that was easily causing falls even with the slightest spill of water into a non-slippery one. The floors we have now can withstand a spill of oil or any slippery item which could cause a fall of a worker. We have invested in it and it is helpful (A 2 Star hotel restaurant manager). ‘*

This finding of the hotels and restaurants running risk assessments matches with Rajini et al. (2012) observation that revealed that conducting a risk assessment was one of the measures carried out by hotels in Sri Lanka to ensure occupational safety and health

For facilities that do not conduct the risks assessment, these were the remarks of some managers:

*Oh, to be frank with you I do not conduct such assessments in my facility (A 2 Star hotel restaurant manager).*

*I do not conduct risk assessment. I don't even know what it means (A 1 Star hotel restaurant manager).*

### **Summary**

The chapter examined measures carried out by staff and those implemented by management to ensure safety and health in restaurant kitchens in Accra. These measures were gauged across the ILO guidelines on OSH management systems and general safety and health conditions stipulated in the Labour Act (ACT 651). Generally, it emerged that some of the staff and management carried out certain measures in ensuring safety and health in the facilities as required by law. However, few specific measures were not carried out much by the kitchen staff. These involved staff attending training on electrical safety, how to administer basic first aid and the use of ear muffs. On the side of the employers, stocking first aid boxes, having first aiders on board, availability of medical rooms/onsite clinics, accident books as well as the use of a bucket of sand were some of the measures that were inadequate in the facilities.

## CHAPTER SEVEN

### BARRIERS TO COMPLIANCE WITH SAFETY AND HEALTH

#### MEASURES IN RESTAURANT KITCHENS

##### Introduction

Businesses encounter barriers in their management of safety and health. Identifying these barriers to occupational safety and health compliance is significant for preventing non-compliance with measures that can have diverse on employees and employers. The chapter discusses the barriers to compliance with safety and health measures in restaurant kitchens in Accra. The barriers to safety and health compliance were examined from the perspectives of staff and management.

##### Barriers to Staff Compliance with Safety and Health Measures

Table 18, presents the results of respondents' agreement to the thirty-four barriers statements to their compliance with safety and health in the restaurant kitchens. As evident in Table 18, there were two broad categories of barriers to compliance with safety and health measures namely; individual and institutional factors. The individual factors cover elements such as staff behaviour and belief whereas, the institutional factor covers issues like lack of management commitment and work pressure. The overall mean value of the individual-related items was 1.16 as against the institutional barriers of 1.40. These results imply that the majority of the respondents did not admit to the statements listed as barriers to their compliance with the safety and health in the kitchens. On the whole, their disagreement with the institutional components of the barriers was more than the barriers linked to the individual workers.

**Table 18: Barriers to Staff Compliance with Safety and Health Measures**

Barriers	% in agreement	M	SD
Individual factors (overall)	7.82	1.16	0.527
Behavioural			
The use of protective clothing slows down my work performance	20.9	1.42	0.815
I forget to use the protective equipment	15.6	1.32	0.728
I feel uncomfortable wearing non-slippery shoes	14.4	1.29	0.703
I forget to comply with the safety instructions and procedure	13.1	1.28	0.683
I feel uncomfortable wearing gloves	10.6	1.22	0.619
I have no time to attend safety training	7.8	1.16	0.542
I feel uncomfortable covering my hair	6.9	1.14	0.507
I have worked for many years and my experience protects me not the health and safety measures	6.3	1.13	0.492
Other staff do not comply with the measures too and nothing happens to them	6.3	1.13	0.490
I am not aware of the safety and health measures	5.9	1.12	0.473
Other staff ridiculed me when I complied with the health and safety measures	5.3	1.11	0.455
I feel uncomfortable wearing aprons	5.3	1.11	0.449
I am attached to my old ways of working without using PPE	4.7	1.12	0.443
Overall	9.60	1.20	0.569
Belief (overall)			
I don't believe the safety and health measures can prevent the occurrence of injuries or illnesses	3.1	1.05	0.313
I believe workplace injuries/illnesses are punishment from God/gods and not about the non-compliance to the health and safety measures.	2.5	1.05	0.313
My religion does not allow me to report an unsafe act of others	0.6	1.01	0.158
Overall	3.0	1.06	0.323
Others			
I have breathing difficulty when I wear the complete protective clothing	10.6	1.22	0.619
I get rashes on my skin when I use the gloves	5.3	1.11	0.449
I have no money to buy PPE	3.4	1.08	0.372
Overall	6.78	1.14	0.48



Table 18: Cont.

Institutional factors (overall)	20.04	1.40	0.731
Lack of management commitment			
Management does not organize training on basic electrical safety	59.1	2.19	0.981
Management does not organize training on basic first aid administering	48.1	1.97	0.999
Management do not organize training on drills for fire evacuation	34.4	1.69	0.951
Management do not organize training on general control of hazards	19.1	1.38	0.787
Management does not organize training on use of personal protective equipment	17.5	1.35	0.761
There is lack/inadequate enforcement of the safety and health measures by management	17.2	1.34	0.756
There is lack/inadequate supervision on the safety and health measures by management	16.9	1.34	0.750
Management does not provide PPE	16.9	1.34	0.750
Management does not regularly provide PPE	16.6	1.33	0.745
There is inadequate supply of PPE	11.9	1.25	0.652
Management tags staff as difficult if they report hazards or unsafe act/ conditions in the kitchen	7.8	1.16	0.540
Management provides irregular size PPE that are uncomfortable to use	6.9	1.14	0.511
Management does not take any action when I report any hazard or unsafe acts in the kitchen	6.6	1.13	0.496
My manager does not allow me to attend the health and safety training	4.4	1.09	0.410
Overall	20.24	1.41	0.686
Work pressure			
Work pressure prevents me from complying with instruction on safety matters	23.4	1.47	0.849
Work pressure prevents me from complying with safety and health procedures	21.6	1.43	0.824
Work pressure prevents me from attending training sessions	12.2	1.25	0.658
Overall	19.07	1.33	0.777

Source: Field survey, 2021

Scale = Disagree: 1.00 -1.49, Neutral: 1.50-2.49, Agree: 2.50-3.00

Generally, respondents were not in agreement that their non-compliance to safety and health was their own doing (92.2%). Only about 10.0% of them linked their non-compliance with safety and health measures to their behaviour. Specifically, over 10.0% of the respondents were in agreement that they did not use PPE regularly because they felt uncomfortable wearing them (non-slippery shoes; 14.4% and gloves; 10.6%). Feeling uncomfortable was similarly the observation made by Paes, et. al. (2020), in a study conducted among commercial restaurant workers in Brazil.

Another factor that hindered the respondents from using PPE regularly was related to the fact that the PPE slow down their work (20.9%). The issue of forgetfulness in using protective clothing while working was also raised by 15.6% of respondents. The indication that PPE slows down the respondents' work corresponds with the findings reported by Kumari and Kapur (2018), and Tsai (2009) in studies carried out among kitchen staff in India and the United States respectively. In addition, the issue of forgetfulness serving as a limitation in the use of protective clothing while working reinforces the results of a study by Tsai (2009) among restaurant staff in the United States.

Concerning the institutional factors, 20.24% of the issues considered as barriers to compliance to safety and health were attributed to inadequate management commitment towards safety and health. Staff identified a lack of regular training by management as the major impediment to their compliance with safety and health in their workplace. Specifically, the respondents identified irregular training in basic electrical safety (59.1%), irregular drills on fire evacuation (34.4%), and a lack of training in basic first aid administration (48.1%). Irregular training for the kitchen staff on safety and health can be said

to be problematic given that it is the main tool for creating and sustaining safety and health awareness among the staff (Cherono, 2011). Thus, its absence may prevent staff from acquiring the knowledge needed to effectively ensure safety and health in the kitchen.

Staff blaming the inadequacy of management commitment for their non-compliance of safety and health measures in restaurant kitchens was similarly the observation made by Adanse et al. (2017) and Esterhuyzen (2019), in studies carried out in Ghana and South Africa respectively.

Aside from these, over 20% of the respondents flagged work pressure as a factor inhibiting them from following safety and health instructions (23.4%) and procedures (21.6%). The finding that work pressure clogs staff compliance with safety and health aligns with the observation by Kumari and Kapur (2018), in their study among kitchen staff in Delhi.

Further on the institutional factors, about 17.0% of the staff reported management's inability to provide them with PPEs was a factor that hindered their compliance. In cases where management provided them with PPEs, it was reported to be irregular (16.6%). The finding is similar to observations made by Kumari and Kapur (2018), Maseko (2016), and Tsai (2009), that irregular-sized PPE supplied by management was considered an impediment factor to compliance with safety and health in their respective studies on food production staff in Delhi, South Africa, and United States.

Other issues attributed to management in terms of non-compliance with safety and health were management not taking any action when hazards were reported (6.6%), and not allowing staff to attend training (4.4%). The concern of management refusing to act positively when hazards were reported in the

restaurant kitchens was found to be consistent with Maseko (2016), who made a similar observation in a study among food and beverage staff in South Africa.

The results of this section support Esterhuyzen (2019) assertion that barriers to compliance with occupational safety and health measures in restaurant kitchens are ascribed to individual and institutional factors. The results also support the Domino Theory which human and the Domino Sequence of Accident Causative Theory which cited managerial attributes factors that excite hazards to cause injuries or damage in workplaces in this study. This implies that workers and management are important agents who must work together to ensure safety and health in the restaurant kitchens as outlined in the conceptual framework of this study.

### **Employers' Perspective on Barriers to Compliance with Safety and Health Measures in Hotels and Restaurants**

This section explores the employers' perspective on barriers to safety and health measures in hotels or restaurants. An in-depth interview was carried out to gain insight into the barriers. The findings that emerged from the transcripts showed that whereas some hotels and restaurants encountered some impediments with regard to their compliance with the occupational safety and health measures in their facilities, others did not face any hindrances. For the study participants who did not face any hindrance in the implementation of the occupational safety and health measures, these were what they had to say:

*In this facility, we carry out all measures to promote and protect the safety and health of our workers. Nothing prevents us from carrying out such measures here. We know*



*what is right and the importance of doing it, so we do it (A 3 Sar Hotel Restaurant Manager).*

*We are not faced with any barrier in carrying out our mandate of protecting the safety and health of our staff. We do everything that is needed to be done to ensure the safety and health of everyone in this facility (A 2 Sar Hotel Restaurant Manager).*

These findings suggest that the managers were aware they had responsibilities for ensuring safety and health in their facilities to help protect their workers from risk.

For the study participants who admitted to some hindrances in the implementation of occupational safety and health measures in their facilities, a number of factors were mentioned. These were the complaints of workers' attitudes, ignorance of the safety and health measures by management, and the cost involved in getting experts to train staff on safety and health matters in the facility. Among these issues, managers' ignorance of safety and health measures came out as the key hurdle to ensuring compliance with the safety and health measures in the facilities. Some of the study participants indicated that the lack of awareness of their duties in ensuring occupational safety and health measures was a barrier. These measures were specifically with regard to the organization of occupational safety and health training and the provision of PPE for their staff. These observations were remarked as follows:

*We are not providing aprons, non-slippery shoes, and other clothing for our staff because we are not aware we must do so (A Grade 2 Restaurant manager).*

*I do not organize safety and health training for my staff, nor do I conduct risk assessments in my facility because I don't know it is my responsibility to organize such training for my staff. With the issue of me conducting risk assessment, the fact is, I don't even know what this is, less to talk about carrying it out (A 1-Star hotel manager).*

These findings show that these facilities are not complying with the directives of the Ghana Labour Act, Act 651 which requires employers to provide their staff with PPE and training on safety and health matters. With the comment on the provision of PPE, the finding suggests that once management was not in charge of supplying the clothing to their workers, they might not be able to instruct or compel the staff to use them regularly. In this regard, management will be held accountable for any injury or illnesses that will be encountered by any of the staff as a result of the non-usage of the protective clothing.

Another barrier detailed by a 2-Star hotel manager was employees' attitudes. His narration:

*Management does not supply personal protective clothing to staff anymore. The staff is made to buy them on their own for use. You know, we were first supplying the staff with protective clothing. But we realized anytime they were exiting the job, they had the habit of taking them away. So,*

*we have stopped supplying. If you buy it yourself, you can leave with it without any problem* (A 2-Star hotel manager).

This finding supports Sing's (2012) study which similarly cited the attitude of workers as a factor inhibiting management compliance of occupational safety and health in establishments involving the hospitality industry in Singapore.

The issue of cost was also considered a barrier to management compliance with the occupational safety and health measures in the restaurant kitchens by another participant. She said:

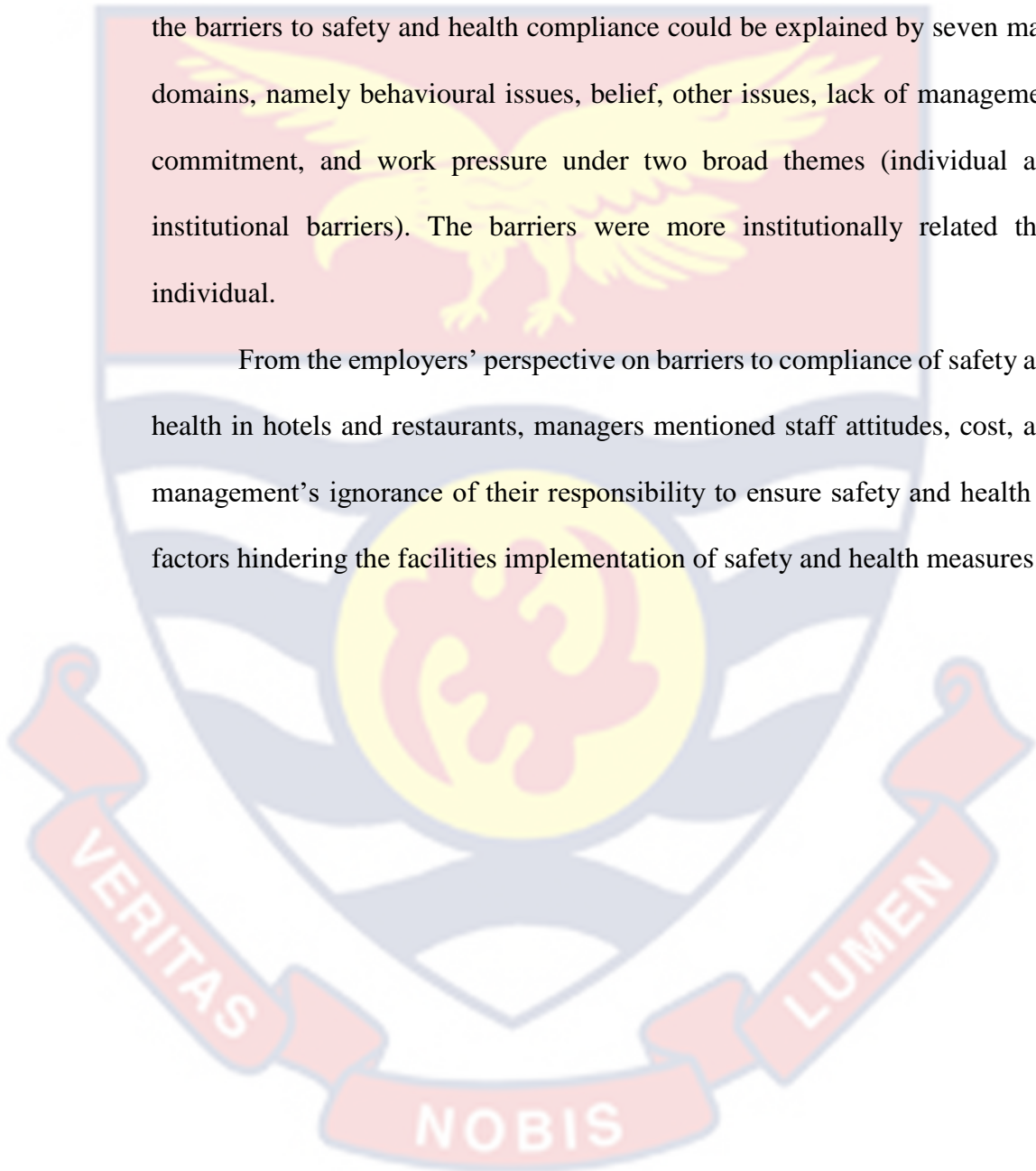
*We don't invite personnel to come and organize such training (occupational safety and health training) for the staff here because it is costly. There is always a cost in paying for the personnel's transportation, feeding, and tipping which is putting something in their pocket. So, we don't invite them on our own. We can't afford it.* (A 1-Star hotel management).

This finding suggests that the workers in this facility would not be able to have the necessary knowledge, abilities, and capability to religiously follow safety and health measure that will help prevent injuries and illnesses, the finding supports Esterhuyzen's (2019) study which similarly cited money as a factor hindering the implementation of safety and health by businesses in South Africa.

## Summary

The chapter dealt with the barriers to occupational safety and health compliance from the perspectives of kitchen staff and employers of hotels and restaurants. With regards to the barriers to staff compliance, the study found that the barriers to safety and health compliance could be explained by seven main domains, namely behavioural issues, belief, other issues, lack of management commitment, and work pressure under two broad themes (individual and institutional barriers). The barriers were more institutionally related than individual.

From the employers' perspective on barriers to compliance of safety and health in hotels and restaurants, managers mentioned staff attitudes, cost, and management's ignorance of their responsibility to ensure safety and health as factors hindering the facilities implementation of safety and health measures.





## CHAPTER EIGHT

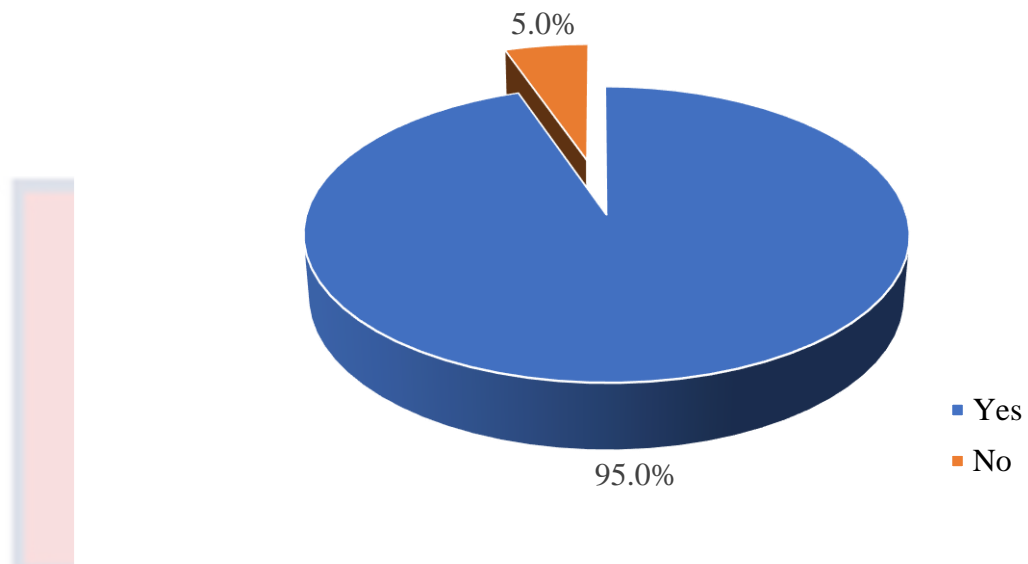
### EFFECTS OF HAZARDS ON RESTAURANT KITCHEN STAFF

#### Introduction

Workplace hazards initiate occupational safety and health consequences for workers. This chapter explores the effects of the hazards encountered in restaurant kitchens on the health and behaviour of staff. The details include the various effects the staff associated with the existing hazards and the effects encountered by socio-demographic, employment, and facility-related characteristics. Other issues covered under the chapter are the forms of the physical, psychological and behavioural effects of hazards encountered by the staff, the severity of the effects, and the characteristics of the injuries and illnesses suffered by the restaurant kitchen staff.

#### Effects of Hazards on Restaurant Kitchen Staff

This segment presents employees acceptance of the effects of hazards in the restaurant kitchens. To unearth the various forms of health and behavioural conditions suffered by staff in the course of duty in the kitchen, the respondents were screened to identify those affected with a condition before proceeding with the follow-up questions. Specifically, the respondents were asked to indicate whether they had encountered any health conditions or exhibited any behaviour due to the existing hazards in the kitchen. As shown in Figure 8, the majority of the respondents (95.5%) answered in the affirmative. This result is comparable to Maseko's (2016) study conducted in South Africa, where 79.2% of the food and beverage staff had experienced work-related injuries in the course of discharging their duties.

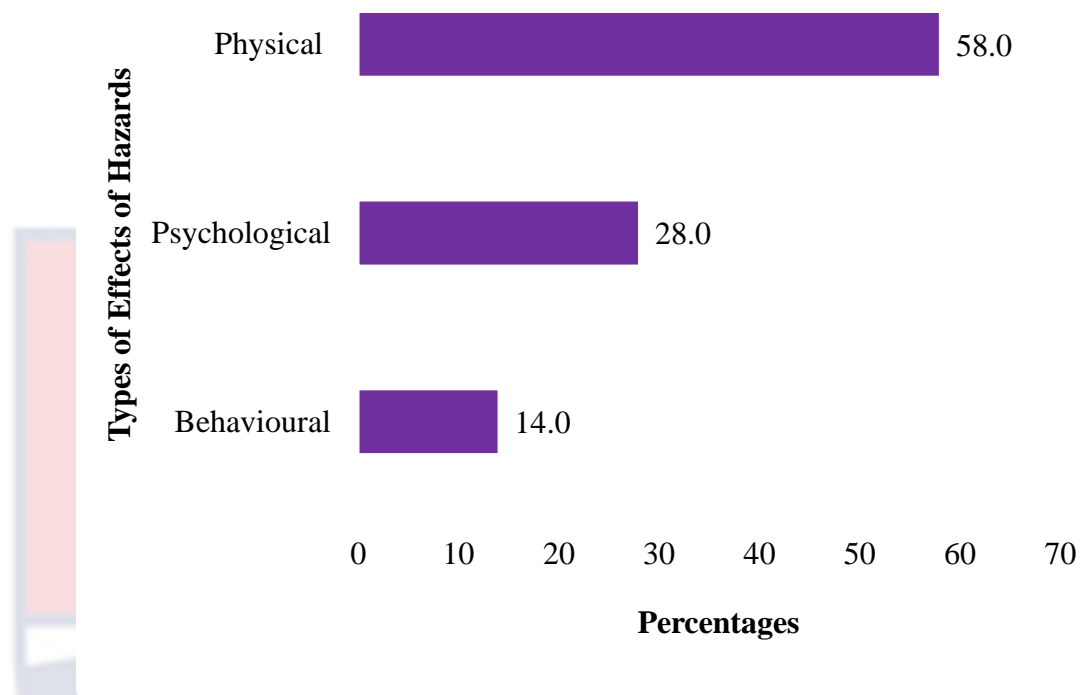


*Figure 8: Effects of Hazards in the Restaurant Kitchen*

Source: Field survey, (2021)

#### **Types of Effects of Hazards on Restaurant Kitchen Staff**

Figure 9, depicts the categories of the effects of hazards in the kitchen on staff. These range from physical, psychological, and behavioural. On the whole, physical effects appeared to be the most reported health condition (58.0%) among the restaurant kitchen staff. The psychological effect emerged as the second highest condition (28.0%) suffered by the staff as a result of their encounter with the hazards in the restaurant kitchens. The lowest condition identified among the staff (14.0%) was behavioural effects. This finding confirms the fact that hazards trigger health and behavioural conditions in workplaces (Bird & Loftus, 1976; Burton, 2010; Danna & Griffin 1999; Heinrich, 1931).



*Figure 9: Types of Effects of Hazards Encountered in the Restaurant Kitchens*  
Source: Field survey, (2021)

### **Socio-demographic Characteristics and Effects of Existing Hazards on Kitchen Staff**

The Chi-square Test of Independence was employed to examine the relationships between the effects of hazards on kitchen staff and socio-demographic variables such as gender, age, marital status, and educational attainment of the respondents. As evident in Table 20, no statistically significant relationship was established among the variables. This is probably, because all the restaurant kitchen staff irrespective of their socio-demographic characteristics suffered similar injuries or illnesses in the course of performing their duties.

Nevertheless, it was observed that physical health condition was the most encountered condition reported across the entire groups of the restaurant kitchen staff. For instance, within gender, the results showed that physical

**Table 19: Socio-demographic Characteristics by Effects of Hazards on Respondent**

Characteristics	Types of effects of hazards (%)			$\chi^2$	p-value
	PE	PSYE	BE		
Gender				2.96	0.228
Male	59.4	26.8	13.9		
Female	55.8	29.5	14.6		
Age				3.42	0.181
< 35 years	58.4	27.0	14.5		
35 & above	55.5	30.9	13.7		
Marital status				1.62	0.444
Unmarried	56.6	29.0	14.4		
Married	59.3	26.6	14.1		
Level of Education				3.66	0.454
Basic Education	61.4	25.8	12.7		
Secondary Education	57.6	28.1	14.3		
Tertiary Education	53.4	31.0	15.5		

Source: Field survey, (2021)

NB: PE.; Physical effect; PSYE.; Psychological effect; BE.; Behavioural effect

Note: significant value at  $p < 0.050$

health condition was reported by 59.4% of the male staff and psychological health condition was suffered by 26.8% of the staff. The female staff (55.8%) also suffered more physical health conditions over the other effects of hazards in the kitchens. Although not significant, the finding of males suffering more physical effects of hazards contradicts the observations made by Buchanan et. al (2010), in a study conducted among hotel staff in the United States and



Alamgir et al. (2007), in Canada where females were noted as the gender with the highest injury rate in the kitchen.

### **Employment and Facility-Related Characteristics and Effects of Hazards on Kitchen Staff**

Regarding employment and facility-related characteristics and the effects of hazards variables (Table 21), the results of the Chi-square statistical analysis disclosed a significant relationship between years of operation of a hotel or restaurant and the types of effects of hazards ( $\chi^2 = 9.47$ ;  $p = 0.050$ ). The Chi-square Test of Independence Post hoc test reveals that the significant difference was between the respondents who were affected by physical and psychological effects of hazards in the facilities and had been in operation for less than 10 years.

As indicated in Table 21, the respondents working in facilities that had been in operation for less than 10 years suffered more physical health conditions (52.9%) followed by psychological conditions (32.4%). Those (60.2% %) in the moderately new facilities (10-19 years) and 58.2% in the older facilities (20 years and above) similarly reported physical health conditions as the main effects of hazards they encountered in the restaurant kitchens.

Nonetheless, the evidence in Table 21, suggests that there is no statistically significant relationship established between the effects of hazards and the employment and facility characteristics such as type of restaurant kitchen, grade of the restaurant, grade of hotel, staff position, mode of employment and respondents work experience. However, it was observed that physical health condition was the main of effect registered across the entire groups of respondents. For instance, across respondent's mode of employment

and the types of effects of hazards encountered in the kitchen, the results show that both temporal (60.2%) and permanent (57.2%) workers in the restaurant suffered mainly physical health conditions in the course of discharging their duties.

**Table 20: Employment and Facility-Related Characteristics of Respondents by Effects of Hazards**

Characteristics	Types of effects of hazards (%)			$\chi^2$	p-value
	PE	PSYE	BE		
Type of restaurant kitchen				2.89	0.236
Independent restaurant	57.3	27.2	15.3		
Hotel restaurant	57.8	29.3	12.9		
Grade of Hotel				5.00	0.287
Upmarket hotels (3-5)	54.6	32.9	13.2		
Two Star	61.4	26.9	11.7		
One star	54.3	29.9	12.9		
Grade of Restaurant				14.25	0.921
Grade 1	58.9	26.4	14.7		
Grade 2	57.2	28.1	14.7		
Grade 3	56.3	27.3	16.4		
Years of operation of hotel/restaurant				9.47	0.050
<10 Years	52.9*	32.4*	14.7		
10-19 Years	60.2	26.3	13.5		
20 & above	58.2	27.0	14.9		
Mode of Employment				0.98	0.612
Permanent	57.2	28.5	14.3		
Temporal	60.2	25.5	14.3		
Position in kitchen				1.08	0.898
Chef	56.3	28.5	15.2		
Cook	57.8	28.2	14.1		
Kitchen Assistant/ Steward	58.9	28.0	13.1		
Work experience				0.49	0.781
< 10 Year	57.3	28.2	14.5		
10 years & above	58.3	28.5	13.2		

Source: Field survey, (2021)

NB: PE.; Physical effect; PSYE.; Psychological effect; BE.; Behavioural effect

Significant value at  $p < 0.050$

\*Cells that produced the statistically significant difference (using critical value of  $\pm 1.96$ )

The temporal workers suffering mainly physical health conditions as a result of hazards they encountered in the restaurant kitchens might be because as a group who are perceived to easily exit the job, they have limited access to basic safety training and use of PPE which is needed for them to handle hazards in the kitchen. The finding of the temporal kitchen staff being affected mostly by the physical effects of hazards confirms a study by Schweder et al. (2015), that also identified temporal workers as a group reporting more injuries in food industries in New Zealand.

### **Forms of Physical Effects of Hazards Encountered by Staff of Hotel and Independent Restaurant Kitchens**

Table 21, shows the specific physical health conditions that ensued from hazards faced by the kitchen staff. The physical effects of hazards constituted the injuries (cuts/burns and musculoskeletal) and ailments encountered by the staff of the restaurant kitchens. As shown in Table 21, there were nineteen different physical health conditions encountered by respondents in the restaurant kitchens. Broadly, these conditions were grouped into four, namely: cuts and burns, musculoskeletal injuries, and acute and chronic ailments. Amid the cuts and burns category of injuries, the major condition cited by the respondents was cut/laceration (72.2%). Burns was the next highest health condition identified in the restaurant kitchens. This was followed by scalds which were recorded among a little over one-third (35.3%) of the respondents

**Table 21: Physical Effects of Hazards on Staff in the Hotel and Independent Restaurant Kitchens**

Forms of Effects	Overall		HR		IR	
	Freq (N = 303)	% 100	Freq (N = 127)	% (41.9)	Freq (N = 176)	% (58.1)
<b>Burn/Cut Injuries</b>						
Cuts/Laceration	231	72.2	97	42.0	134	58.0
Burn	170	53.1	65	38.2	105	61.8
Scalds (Burn with hot liquid)	113	35.3	47	41.7	66	58.4
Bruises	20	6.3	8	40.0	12	60.0
<b>Musculoskeletal Injuries</b>						
Back pain	152	47.5	63	45.7	89	58.6
Muscle pain (muscle cramp)	56	17.5	20	35.7	36	64.3
Arthritis (joint pain/inflammation/stiffness)	51	15.6	14	27.5	37	72.5
Adhesive capsulitis (Stiffness/frozen shoulder)	9	2.8	4	44.4	5	55.6
Tunnel syndrome (pain in the nerves)	5	1.6	2	40.0	3	60.0
Bone pain (Fracture)	3	0.9	1	33.3	2	66.7
Tendon and ligament pain (Spring)	2	0.6	1	50.0	1	50.0
<b>Acute Ailment</b>						
Headache	135	42.2	55	40.7	80	59.3
Cold	81	25.3	42	51.9	39	48.1
Cough	62	19.4	33	53.2	29	46.8
Migraine	27	8.4	10	37.0	17	63.0
Rashes	13	4.1	5	38.5	8	61.5
Anaemia	7	2.2	4	57.1	3	42.9
Chest pains	5	1.6	3	60.0	2	40.0
Pneumonia	2	0.6	2	100.0	0.0	0.0
<b>Chronic Ailments</b>						
Eye problem	23	33.8	12	52.2	11	47.8
Stomach ulcer	16	23.5	9	56.3	7	43.8
Hypertension	13	19.1	8	61.5	5	38.5
Obesity	4	5.9	2	50.0	2	50.0
Diabetes	6	8.8	4	66.7	2	33.3
Asthma	3	4.4	3	100.0	0.0	0.0
Low/High cholesterol	3	4.4	1	66.7	2	33.3

Source: Field survey, (2021)

HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering at the physical health condition in the kitchen



and bruises which emerged as the least (6.3%) of the condition cited by the respondents.

Similar findings have been made by other authors. For instance, Gleeson (2001), Bindu and Reddy (2016), Jahangiri et al. (2019), and Tak (2016), in their studies recounted cuts/laceration, burns, and scalds as injuries suffered by respondents in a related working environment. The observation that cut was the highest form of injury in this particular category is consistent with studies carried out by Haruyama et al. (2014) and Tomita et al. (2013) which also highlighted cuts as the main injury suffered by kitchen staff. Specifically, between the two facilities, it was noted that more than half of the independent restaurant kitchen staff experienced cut/lacerations (58.0%), burns (61.8%), scalds (58.4%), and bruises (60.0%) compared to the hotel restaurant kitchen staff.

Musculoskeletal injuries involve injuries caused to the bones, nerves, joints, muscles, ligaments, and tendons of the human body. As indicated, in Table 21, back pain was the highest (47.5%) of all the conditions reported by the respondents in this category. This was followed by muscle pain (17.5%) and arthritis (15.6%). Tendon and ligament pain was the least (0.6%) of these injuries encountered in the restaurant kitchens. Also, back pain (58.6%) and tendon and ligament pain (72.5%) were recorded more among the independent restaurant kitchen staff than the hotel restaurant kitchen staff. Registering musculoskeletal injuries as a health condition suffered by the staff of the restaurant kitchens is congruent with the observations made by similar studies (Jahangiri et al., 2019; Shakya & Shrestha, 2018; Tan & Balaraman, 2020; Tak,

2016; Tsai, 2009). Specifically, back pain, arthritis, adhesive capsules, and carpal syndrome were also mentioned in the findings of these studies.

On the ailments suffered by the respondents in the restaurant kitchens, two groups (acute and chronic) of conditions were reported in this study. In terms of acute illnesses suffered by the respondents, headache was the most common condition reported by 42.2% of the respondents. Migraine as a form of headache was also reported by a only 8.4% of the respondents. The results further show that while more than half of the independent restaurant kitchen staff were noted to have experienced headaches (59.3%) and migraine (63.0%), more than half of the hotel restaurant kitchen staff experienced chest pains (60.0%) and anaemia (57.1%) as a result of the hazards they faced in the kitchens.

Colds and coughs as respiratory disorders alongside pneumonia were other ailments suffered by respondents. Specifically, cold was recorded among 25.3% of the respondents whereas cough was experienced among slightly less than one-fifth (19.4%) of the respondents. Pneumonia emerged as the least (0.6%) of the respiratory disorders. As shown in Table 22, the majority of the hotel restaurant kitchen staff suffered from colds (51.9%) and coughs (53.2%) compared to their counterparts from the independent restaurant kitchen. All the respondents who suffered from pneumonia were also working in the hotel restaurant kitchens.

Presenting on the chronic illnesses respondents have suffered as a result of the hazards they had faced in the restaurant kitchens, Table 21, indicated seven such illnesses, namely obesity, asthma, hypertension, low or high cholesterol level, diabetes, eye problems, and stomach ulcer. As observed in the

table, eye problem was deemed the dominant (33.8%) condition reported by the respondents. Stomach ulcer was the second highest (23.5%) ailment suffered by the respondents. Next in line was hypertension which was reported by 19.1% of the respondents. The lowest chronic conditions suffered by the respondents were asthma (4.4%) and low/high cholesterol levels (4.4%).

There had been similar findings reported in other studies (Jahangiri, et al., 2019; Malik & Rather, 2017). For example, in a study by Malik and Rather (2017), hypertension, diabetes, and obesity were the chronic conditions recorded among the staff of a hotel kitchen in Aurangabad, Maharashtra in Asia and eye problem was the also the condition kitchen staff suffered in the course of discharging their duties in restaurants in Shiraz city, South of Iran (Jahangiri et al., 2019). Table 21, further shows that almost all the chronic illnesses were experienced by more than half of the hotel restaurant kitchen staff. Nevertheless, the condition of obesity was equally recorded among the independent restaurant kitchen staff (50.0%) and the hotel restaurant kitchen staff (50.0%).

### **Severity of Physical Effects of Hazards Encountered by Respondents**

This section presents the magnitude or the level of severity of the physical effects of hazards encountered among respondents working in both the hotel and independent restaurant kitchens. The general observation from the results (Table 22), indicates that the injuries and acute illnesses encountered by the respondents were minor cases that treated with first aid. Specifically, with regards to the injuries encountered among the restaurant kitchen staff, Table 22, reveals that all (100.0%) of the respondents who encountered bruises in the restaurant kitchens as well as the majority of those who suffered cuts/lacerations (89.6%) and scalds (87.6%) indicated that the conditions were just minor cases.

**Table 22: Magnitude of Physical Effects of Hazards Encountered by Respondents**

Forms of Effects	Level of severity	Frequency (N = 303)	Percentage
Burn/Cut Injuries			
Burn	Significant	26	15.3
	Minor	135	79.4
	Moderate	9	5.3
Cuts/Laceration	Significant	9	3.9
	Minor	207	89.6
	Moderate	15	6.5
Scalds (Burn with hot liquid)	Significant	3	2.7
	Minor	99	87.6
	Moderate	11	9.7
Bruises	Minor	20	100.0
Musculoskeletal Injuries			
Bone pain (Fracture)	Major	3	100
Muscle pain (muscle cramp)	Significant	2	3.6
	Minor	50	89.3
	Moderate	4	7.1
Back pain	Significant	3	2.0
	Minor	125	82.2
	Moderate	24	15.8
Tendon and ligament pain (Spring)	Minor	2	100
Tunnel syndrome (pain in the nerves)	Minor	4	80.0
	Moderate	1	20.0
Arthritis (joint pain/inflammation/ stiffness)	Significant	1	2.0
	Minor	40	78.4
	Moderate	10	19.6
Adhesive capsulitis (Stiffness/ frozen shoulder)	Significant	2	22.2
	Minor	7	77.8



Table 22: Cont.

Acute Ailment			
Headache	Significant	7	5.2
	Minor	122	90.4
	Moderate	6	4.4
Cold	Significant	5	6.2
	Minor	70	86.4
	Moderate	6	7.4
Cough	Significant	3	4.9
	Minor	57	91.9
	Moderate	2	3.2
Chest pains	Minor	4	80.0
	Moderate	1	20.0
Migraine	Minor	22	81.5
	Moderate	5	18.5
Rashes	Minor	11	84.6
	Moderate	2	15.4
Anaemia	Moderate	6	85.7
	Major	1	14.3
Pneumonia	Major	2	100.0

Source: Field survey, (2021)

N: All respondents who reported encountering a health condition in the kitchen

Additionally, tendon and ligament pains (100.0%), muscle pain (89.3%), back pain (82.2%) and tunnel syndrome (80.0%) as musculoskeletal injuries encountered among the respondents were also, described as minor conditions that were managed with first aid treatments. However, bone pain as one of the musculoskeletal injuries was marked by 100.0% of the respondents as a major condition because its management or treatment required a specialist or hospitalization. The observation that the injuries encountered among the kitchen staff were mostly minor conditions that needed not more than first aid treatments corresponds with the findings made in similar studies (Gleeson,

2001; Meseke, 2016; Tsai, 2009) that also recorded minor cases of most injuries that were encountered by food production staff.

Concerning the ailments suffered by the respondents, nearly 92.0% of those who experienced coughs in the restaurant kitchens equally labelled the condition as a minor one. Headache was as well documented as a minor condition among the majority (90.4%) of the respondents in the restaurant kitchens. However, as pneumonia was identified as the least respiratory disorder encountered by the kitchen staff, it was flagged among 100.0% of the respondents as a major condition that required a specialist for its treatment or management from the hospital.

#### **Characteristics of Physical Effect Encountered by Kitchen Staff**

Judging on the injuries (physical effect) reported by the restaurant kitchen staff, the study went further to ascertain the characteristics of such injuries. In this regard, the respondents were asked to indicate the part of their bodies that were affected with regard to the various injuries they had experienced in the kitchens. As illustrated in Table 23, among the respondents who experienced burns in the kitchen, the majority (72.6%) indicated that their arms/hands were the most affected. The finger was also cited by 58.8% of the respondents as the most affected body part with regard to the injury of laceration or cut. The hand followed with about one-third (33.9%) of the respondents citing it as the affected part. Scalds occurred mainly in the hands of 68.2% of the staff. Bruises equally affected the legs (50.0%) and arms/hands (50.0%) of the respondents' bodies. Staff having injuries on their arm/hand, fingers and legs were equally the observation made by Meseke (2016) in a study carried out among food and beverage staff in South Africa.

**Table 23: Characteristics of Injury Encountered Among Restaurant Kitchen Staff**

Type of injury	Part of body injury	Frequency (N = 303)	Percentage (%)
Burn	Arm/Hand	154	72.6
	Fingers	18	8.5
	Leg	16	7.5
	Palm	12	5.7
	Face	10	4.7
	Neck	2	0.9
	Total		*212
Laceration/cut	Finger	177	58.8
	Hand	102	33.9
	Leg	11	3.7
	Palm	11	3.7
Total		*301	100.0
Scalds	Hand	88	68.2
	Leg	18	14.0
	Face	12	9.3
	Fingers	6	4.7
	Palm	4	3.1
	Chest	1	0.8
Total		*129	100.0
Bruises	Hand	8	50.0
	Leg	8	50.0
Total		*16	100.0
Fracture	Leg	2	66.7
	Hand	1	33.3
Total		*3	100.0
Arthritis	Knee	17	29.3
	Waist	16	27.6
	Wrist	11	19.0
	Shoulder	10	17.2
	Hip	1	1.7
	Ankle	3	5.2
Total		*58	100.0
Back pain	Lower back	83	62.9
	Upper back	49	37.1
Total		*132	100.0

Source: Fieldwork 2021

Regarding musculoskeletal disorders, while a little above one-third (37.1%) of the respondents complained of upper back pain, about 63.0% complained of lower back pain. This implies that lower back pain was common back pain condition registered among the restaurant kitchen staff. This finding corresponds with a similar observation made by Shakya and Shrestha (2018) in a study carried out in Nepal among the kitchen staff. Further, on the characteristics of the musculoskeletal disorders, Table 23 portrayed that among the respondents who had fractures in their course of work, nearly 67.0% of them had a fracture on their legs. Approximately, 33.0% of the respondents also had a fracture on their hands. Arthritis encountered among the respondents was mainly in the knee (29.3%) and waist (27.6%).

#### **Forms of Psychological Effects of Hazards Encountered by Staff of Hotel and Independent Restaurant Kitchens**

Reporting on the forms of psychological effects of hazards encountered by staff in the course of discharging their duties in the restaurant kitchen, Table 24, shows that six of these conditions were identified among the kitchen staff. Out of these conditions, burnout was key among about three-fourths (74.4%) of the kitchen staff, and the distribution across the two facilities was as follows: independent restaurant (58.8%) and hotel restaurant (41.2%).

Stress was the second highest (53.1%) psychological condition that was felt by the respondents. Sleep deprivation was reported among nearly 30.0% of the respondents. To the lowest degree, depression and sexual dysfunction were reported by 7.5% and 5.9% of the respondents respectively. Relatively, the condition of depression and sexual dysfunction were equally experienced among approximately 58.0% of the independent restaurant kitchen staff than the



hotel kitchen staff (42.0%). The finding on staff reporting their experience of depression and sexual dysfunction as a result of hazards they encountered in the restaurant kitchens were likewise mentioned by Tak (2016) in a study involving similar respondents in Nairobi.

**Table 24: Psychological Effects of Hazards on Staff in the Hotel and Independent Restaurant Kitchens**

Forms of Effects	Overall		HR		IR	
	Freq (N = 303)	% 100	Freq (N = 127)	% (41.9)	Freq (N = 176)	% (58.1)
Burn out	238	74.4	98	41.2	140	58.8
Stress	170	53.1	79	46.5	91	53.5
Sleep deprivation	95	29.7	40	42.1	5	57.9
Anxiety	47	14.7	20	42.6	27	57.4
Depression	24	7.5	10	41.7	14	58.3
Sexual dysfunction	19	5.9	8	42.1	11	57.9

Source: Field survey, 2021

HR.; Hotel restaurant; IR., Independent restaurant

N: All respondents who reported encountering the psychological condition in the kitchen

### **Behavioural Effects of Hazards Encountered by Kitchen Staff**

Unsafe acts and conditions introduce unhealthy practices among staff (Burton, 2010). Given the behavioural effects of hazards shown in Table 25, using prescribed drugs without advice was the most (38.4%) unsafe behaviour carried out among the staff of the restaurant kitchens in Accra. This was followed by the behaviour of undereating (35.3%). Undereating might have

occurred as a result of the staff not having time for food because of the intensity or levels of workloads and the demand of meeting deadlines. These two findings of using prescribed drugs without a doctor's advice and undereating had been similarly cited in previous studies. For instance, while Miranda et al. (2018), mentioned the used use of prescribed drugs non-medically by workers in food industries, Tak (2016) study conducted in Nairobi, identified undereating as one of the effects of hazards exhibited by the staff of a hotel kitchen.

**Table 25: Behavioural Effects of Hazards on Staff in the Restaurant Kitchens (N = 303)**

Acts	Frequency (N = 303)	Percentage
Use of prescribed drugs without advice	123	38.4
Undereating	113	35.3
Overeating	47	14.7
Excessive drinking of caffeine	22	6.9
Excessive drinking of alcohol	5	1.6
Use illicit drug (cocaine, heroin, marijuana)	2	0.6
Smoking of cigarette/tobacco	2	0.6

Source: Field survey, 2021

N: All respondents who reported exhibiting the negative behaviour due to the existing hazards in the kitchen in the kitchen

Also as indicated in Table 25, the act of excessive drinking of alcohol (2.0%), smoking of cigarettes/tobacco (1.0%) and use of the illicit drugs (1.0%) such as cocaine, heroin and marijuana, emerged as uncommon behaviours displayed by the kitchen staff. The finding on the act of drinking alcohol, smoking cigarettes or tobacco and the use of illicit drugs were similarly practices identified among kitchen staff in a study conducted by Belhassen and Shani (2012) in the resort city of Eilat.

## Summary

The chapter explored the effects of the existing hazards in the restaurant kitchens on the health and behaviour of staff. Three main effects of the hazards faced by staff in the restaurant kitchens namely physical effects, psychological effects and biological conditions were revealed in the study. The physical effect was reported as the leading health condition suffered by the staff. The various forms of the physical, psychological and behavioural effects of hazards were also presented in the study. The magnitude of the injuries and illnesses as well as characteristics of the injuries encountered by the staff were presented in the chapter. On the magnitude of injuries and illnesses, the study found that most of the conditions recounted by the staff were minor cases that were just treated with first aid.

Further, the relationship between the main effects of the hazards and the kitchen staff profiles was likewise explored. The results indicated that only years of operation of a hotel or restaurant were found to have a statistically significant relationship with the effects of hazards encountered by the staff.

## CHAPTER NINE

### EFFECTS OF INJURIES/ILLNESSES OF KITCHEN STAFF ON HOTELS AND RESTAURANTS

#### Introduction

Injuries and illnesses are known not only to impact the lives of individuals but also on industries and a nation at large. Industries are affected in diverse ways as a result of the injuries and illnesses of staff in workplaces (Adhikari, 2015; Badekale, 2012; Frost, 2016; Hughes & Ferrett, 2013). This chapter draws on the in-depth interviews with managers who were purposefully selected from hotels and restaurants in Accra. The chapter examines the effects of injuries and illnesses of kitchen staff on hospitality establishments.

#### Nature of Injuries and Illnesses Recorded by Hotels and Restaurants

To purposefully select the managers to help uncover the effects of the injuries and illnesses of staff on hotels and restaurants, the manager was first asked if there had been records of injuries and illnesses of the kitchen staff in their facilities in the last five years. The results of the responses of the managers who answered 'Yes' to the question showed that there were different forms of injuries and few illnesses recorded in the hotels and the restaurants. Specifically, with the nature of injuries recorded in the hotels and restaurants, the report from the ten managers interviewed, revealed that the injuries were just minor cuts, burns, scalds, and bruises. The following are some of the quotations:

*The kitchen staff had been injured severally. These injuries were just minor burns, scalds, bruises and cuts on the fingers, hands or legs. Sometimes these injuries are so insignificant that the affected staff did not even draw the*



*attention of management when the injuries occurred (A 3-star hotel manager).*

*You know per the activities carried out in the kitchen, cuts and burns are inevitable. So, I will say, these had been the most occurred injuries among our kitchen staff. There had also been a couple of bruises and complaints of back ache among the staff of our facility. These have been mainly minor incidents that were treated with just first aid here in the kitchen (A Grade 2 independent restaurant manager).*

However, according to other managers interviewed, their facilities had recorded major injuries alongside minor ones among the kitchen staff. All these participants mentioning the forms of these injuries, always recounted the circumstances under which the injuries occurred. The following are some of their narrations:

*A kitchen staff got severely burnt on her legs with hot cooked ingredients she was blending. For whatever reason, she fell while operating the blender and the content in the blender pour over her legs. Now one of the legs is deformed. This had been the only major case we had recorded in this hotel aside, from the minor cuts and burns which always occur (A 2-Star hotel manager).*

*Apart from the normal cuts, burns, bruises and scalds experienced among the kitchen staff, one of them was brutally burnt with hot soup which had caused a deformity on one-half*

*part of her body (face to the feet). I say brutally because it was a serious injury that kept her away from work for about eight months. She slipped and fell while carrying a pot of soup and accidentally, everything in the pot poured on her. That day oh my God, it was so terrible (A Grade 3 restaurant manager).*

*Here in our restaurant, one of the staff had a deep cut on the finger which required stitching at the hospital. This occurred when he was cutting and at the same time playing with his colleagues. So far, this had been the only severe injury that had been recorded in this restaurant (A Grade 1 restaurant manager).*

The narration of the Grade 3 restaurant manager on the deformity of the kitchen staff resulting from burnt with hot soup gives an indication that issues relating to first aid administering might be problematic in the restaurant kitchen. That the staff might not have the knowledge and competencies in administering first aid to save the lives of their colleagues when there is a need

Concerning the few illnesses mentioned by the hotel and restaurant Managers interviewed, there were minor conditions like headaches, colds and coughs. Narrating the minor conditions, some managers had this to say:

*The illnesses encountered by our staff in the kitchen department had typically been headaches. These were conditions that were treated with just first aid after which the staff continued their work (A 2-Star hotel manager).*

*Colds, cough and headache had been the common health conditions experienced by my kitchen staff. In describing these conditions, I will say, they are trivial because in most cases no medication was given for their treatment (A 1-Star hotel manager).*

Another manager indicated there had been some chronic conditions recorded among the restaurant kitchen staff. Specifically, these had been diabetic and hypertension ailments. Below is his comment:

*There are some of our kitchen staff living with either diabetes, hypertension, or both in this our restaurant (A Grade 2 independent restaurant manager).*

Evidence from the in-depth interviews suggests that the injuries and illnesses encountered by kitchen staff in the course of their duties ranged from minor to severe with the minor ones being more frequent.

### **Effects of Injuries and Illnesses of Staff on Hotels and Restaurants**

In line with the conceptual framework guiding this study, the effects of staff injuries and illnesses on the hotels and restaurants in Accra were examined. Evidence suggests that organizations receive their fair share of the consequences of the presence of the hazards in the work environment (Bird & Loftus, 1976, Danna, & Griffin, 1999) The main issues that emerged from the interviews regarding the effects of injuries and illnesses of staff on the hotels and restaurants were costs. Both direct and indirect costs were associated with injuries and illnesses suffered by the kitchen staff.

## Direct Cost

The direct costs related to the injuries and illnesses of staff in the restaurant kitchens were in regard to medical costs and salary costs. Medical cost in this study involves treatment and repairs of all staff injuries as well as medical benefits or compensation for an injury or any form of illnesses kitchen staff had experienced during the course of work.

### *Medical cost/benefits*

The study found that offering medical costs/benefits has been one of the effects of workplace injuries and illnesses of the kitchen staff in the hotels and independent restaurants in Accra. It was noted that whereas minor injuries and sicknesses had little or no cost to the restaurants and hotels, the costs associated with severe injuries were relatively high. To buttress this point, these were what the study participants said:

*The hotel spends on the health of the staff who fell sick or got injured during the discharge of work. What I mean by this is that we always paid the medical bills for our sick or injured staff who visited the health facility, we have engaged in treating our staff. Most often, the cases reported in the facility by the staff were minor ones that did not involve high medical charges (A 2-Star hotel restaurant manager).*

*We have not had any major injuries or illnesses suffered by any of our staff. The worst situation we encountered was visiting a pharmacy to offer first aid treatment to the staff. Here we pay for the paracetamol or the treatment of minor*



*cuts or burns suffered by a staff (A Grade 1 independent restaurant manager).*

*We paid the medical bills of our staff anytime any of them got sick or injured in the course of working in this hotel. In some of these cases, we paid a lot. For instance, for one of our staff who got seriously burnt during the course of duty, the hotel paid for the ambulance which came for her to the hospital and all the medical expenses till she got better. We even paid for the services of a taxi that was taking her for her review sessions with the doctor. Doing all of these involved a lot of money, especially in the case where the National Health Insurance Scheme did not cover the cost of some medical treatments (A 2-Star hotel restaurant manager).*

*Hmmm, the effects of workplace injuries and sickness of our kitchen staff on us as a restaurant is a serious issue. We spent a lot of money on the treatment of cases that are severe. Definitely, a seriously sick or injured kitchen staff will not just need a first-aid treatment from this facility. The victims are sent to the hospital for proper care and this comes at a higher cost to the restaurant (A Grade 1 independent restaurant manager).*

*The facility spends a lot on severely injured or sick workers. Specifically, with one of our kitchen staff who got burnt from her face to toe, the restaurant footed all her medical bills in the hospital until she was discharged. This cost us a lot, as she was admitted for some number of months (A Grade 3 restaurant manager).*

Another participant commenting on the payment of medical bills added that medical treatment of their afflicted staff is not just a one-time expenditure because they also deal with staff with chronic ailments who require regular medical care. He indicated:

*Payment of medical bills is one of the expenses we made when it comes to workplace injuries and sicknesses of our staff. We always sent afflicted staff to the hospital and paid their medical charges. As I talk to you now, we are every time absorbing the medical cost of the staff who are diabetic or hypertensive or both. These are workers who visit the hospital regularly with a high cost of prescriptions when they develop complications and went on admission to the hospital. These cost the restaurant a lot of money. The most difficult part of this situation is that these are chronic ailments that will not stop, but just need to be controlled. Controlling is not just with first aid treatments, but a doctor's attention which costs much. These are also people we cannot easily laid off due to their long service to the facility (A Grade 2 independent restaurant manager).*

Still, on the medical benefits or compensation given by the facilities for the injuries and sicknesses that were described as severe, it also came up from the transcriptions that the medical benefits given by the facilities go beyond the initial medical cost incurred at the hospitals. Some classic examples of these are stated below:

*After paying all initial medical expenses of a very brutally injured staff, a doctor advised that we provide psychological therapy to the injured for her to accept her current state and also psyche herself up for work. Upon this advice, we as a facility, employed the services of a psychologist to take the staff through the therapy. This was done at an additional cost to the hotel (A 2-Star rated independent restaurant manager).*

*One of our kitchen staff who got burnt severely in the course of discharging her duties needs to undergo plastic surgery as we talk now. Although we absorbed every bit of the cost of the medical treatment during the first phase of her injury, all the money for this operation is also going to be paid for by the restaurant. Currently, all arrangements have been made for the surgery to take place. We are just waiting for the staff to avail herself for the operation. You can imagine the losses the facility had to incur and will continue to make towards her health (A Grade 3 independent restaurant manager).*

Another participant raised the issue of an extra disbursement they made as a hotel to compensate and also help in the healing process of a staff who had a deformity on her body as a result of a severe injury she encountered in the kitchen before resuming work. He said:

*Our hotel sponsored a seriously injured kitchen staff through a first-degree programme she undertook at one of the universities in Ghana. This was an extra mile we went as a hotel to compensate her after paying all her medical bills at the time of injury. These expenses covered her accommodation and tuition fees. This was a compensation claim we fulfilled as a company (A 2-Star hotel restaurant manager).*

Paying the medical bills of injured kitchen staff is comparable to a study conducted by the Health and Safety Authority (2012), which documented payment of medical bills as a cost borne by small businesses in the hospitality industry over the injury of their workers in Ireland.

Probing the amount of money spent on medical costs/benefits or compensation, some managers interviewed mentioned the amount they spent on medical bills to be up to GHC12,000.

*It cost us roughly twelve thousand Ghana cedis (GHC 12.000) for the treatment of the staff who got severely burnt as a result of a boiling soup that poured over her (A Grade 3 independent restaurant manager).*



*The cost of treating our staff who had a dislocation on the left leg after slipping on the stairs you saw in the kitchen caused us about one thousand and two hundred Ghana cedis (GHC 1.200) (A 2-Star Hotel restaurant manager).*

### ***Salary cost***

When an industry faces staff injuries and illnesses, co-workers do overtime, which comes as a salary cost to the employer (Leigh, et al, 2000). One of the managers buttressed this point by citing payment of overtime allowance to the kitchen staff who stood in to assist staff who fell sick or got injured. He recounted that:

*Staff injuries and ailments are constant occurrences in our establishment and the effect of these on our hotel was the cost of paying for staff overtime. Anytime a staff severely fell sick or got injured on the job, we could not immediately employ new staff. So, what we often do as a hotel for our restaurant to continue to operate is to go a little extra mile of rewarding the already existing staff who stood in for the absentees. This we usually do by paying the staff standing for the absentee staff an overtime allowance. For instance, in this hotel, workers run shifts, anytime it happened that one of the chefs got sick or injured and couldn't work, another chef steps in for the affected staff. This assistance was not for free as the chef is paid for the extra time he spends (A 3-Star hotel restaurant manager).*

Some managers indicated that they still pay the full salaries of their injured staff even when they cannot work assiduously as they were doing before their predicaments. In line with this, their workloads have been reduced in order to help them cope. Below were their narratives:

*My kitchen staff is back to work after encountering an injury that caused a deformity on one of her legs. The fact is, she can't work efficiently as she was doing previously. The new staff who was employed in her absence is still at work and both of them are receiving salaries (A 1-Star hotel manager).*

*We have changed the work schedule of the staff who got burnt in the kitchen to a less demanding one. She has been added to those in the salad section. Her task is just to cut vegetables for salads. She is not closer to the open fire anymore as it might aggravate the already worrying condition. But we still pay her just like her colleagues in the soups and stew section even after we have employed new staff to take up her formal schedule (A Grade 3 independent restaurant manager).*

One participant also spoke of higher wages demanded of employees when a colleague is injured. He elaborated:

*When one of the kitchen staff got very severely injured, it allowed the others to demand higher wages or let me say salary increments. It's like they felt the work they are doing is a risky one and they needed to be paid higher to make up*

*for the risk. So, we accepted them as management and increased their daily wages. Although this increased the payroll cost of the restaurant, to management it was the best decision compared to the situation of recruiting new staff should all the staff decide to leave (A Grade 3 independent restaurant manager).*

finding of hotels and restaurants incurring salary costs as a result of work-related injuries suffered by the kitchen staff was similarly observed by Hrymak and Pérezgonzález (2007) in a study involving different occupations including catering or food and beverage services.

### **Indirect Cost**

The indirect cost components are related to lost opportunities for employers whose employees are injured (Leigh, et al, 2000). The indirect costs captured in this study were costs that resulted from production losses and loss of reputation.

#### ***Productivity losses***

Productivity losses are seen as a very large cost component of occupational injuries (Leigh, et al, 2000). Occupational injuries and illnesses of the kitchen staff were reported to slow down production in the restaurants and hotels operating in the study area. The key factor to such a situation as captured in the study was in regards to staff sick absenteeism.

#### ***Absenteeism***

Absenteeism which constitutes a failure to report to work is considered one of the major problems faced by companies in the world (Gangai, 2014). It adds to employers' cost of doing business (Foster & Vaughan, 2005). According

to the managers interviewed, absenteeism due to staff injuries and illnesses in the restaurant kitchens affected the facilities in several ways. Two of these were related to replacing staff and overmanning. The situation of overmanning is shown in the ensuing narrative:

*When workers fall sick or get injured in our restaurant, they do stay off work for several days depending on the degree of injury or illness. Mostly these workers are absent for a minimum of three days. We have to fall on a backup team to replace the absentee worker every time. This comes as an extra cost to us, as we pay these temporary workers regularly to keep them around for such contingencies (A Grade 1 independent restaurant manager).*

Concerning the issue of replacing an injured staff, this was what a manager said:

*A kitchen staff got injured and stayed away from work for a very long time. It cost us a little more to get new staff to replace him. Because this old staff was holding a key position, there was a need for an immediate replacement. So, we recruited a new staff who is currently on a higher salary than what was being paid the previous staff. We need his services to grow the business so we had no choice but to pay him what is taking now (A 2-Star hotel restaurant manager).*

Another area the restaurants and hotels suffered as a result of injuries and sickness relating to sick absenteeism was the issue of work performance.



Badekale (2012) asserts that worker absenteeism slows down the performance of co-workers due to work stress. Often absenteeism interrupts workflow (Frost, 2016) as there is that difficulty for the few workers left to cope with the work that needs to be carried out (Grinza & Rycx, 2018). These claims are not different from what was mentioned by a manager who was interviewed about worker absenteeism. He commented:

*We suffer a lot when a worker especially my chef is sick or injured and have to be absent from work for days. He is the only chef we have in our restaurant. He works alongside two other cooks. Any time he does not come to work, there is pressure on the rest of the workers who have to perform the task of this chef in addition to their tasks. As this happened, it usually affected the performance of the staff as the speed at which they worked was often decreased. Anytime it got to this point, I the manager had to step in and help to cook. You can imagine the stress (A Grade 2 restaurant manager).*

Some of the managers interviewed said that sick absenteeism affected their daily sales. For example, the Manager of a Grade 2 restaurant recounting her experience with staff sick absenteeism had this to say:

*The absence of a sick staff affects what we cook and the sum of sales we make in a day. For example, about three or four times my chef fell sick severely and had to be admitted to the hospital and was later given sick leave, there was that difficulty in operating the business in his absence. There*

*were delays in the cooking time and serving of food to our customers. This affected our daily sales as most of these customers could not wait for the food to be ready and had to just leave without eating or requesting takeaway. Throughout these times, we had a lot of leftovers which were sometimes thrown away because they can't be served again. These were challenging moments as there were losses incurred by the restaurant (A Grade 2 independent restaurant manager).*

Another manager also revealed that the absence of her cook forced her to reduce the quantum of food she cooked for the whole period the staff was absent. The impact this had on her business was a reduction in the amount of profit she usually made in a day. She narrated:

*Anytime my main staff who is my cook here breaks down and had to stay home for several days, the quantity of food we usually cooked in a day is reduced. What I mean by this is that any time my cook was absent I am forced to reduce the quantity of food we normally cooked during the day.*

*This action sometimes disturbed our customers when they did not get their choice of what they wanted to eat. They either bought something small of what was available or refused to eat at all. This mostly affected the amount of profit we typically made in a day (A Grade 3 independent restaurant manager).*

A participant reporting on her experience with staff sick absenteeism in her restaurant similarly mentioned the issue of reduction in sales for the period. This according to her, came as a result of low customer patronage of the restaurant during that period. After this, was the situation of the loss of the freshness of ingredients she bought in bulk to store. Her comments:

*Some of my customers are fond of my cook's food. As such, anytime she falls sick and has to stay off work, they claim the taste of the food has changed so they halt patronizing the restaurant until she resumes. This affects the business as we have to reduce the quantity of food, we cook. This subsequently affects the normal sales we make in a day. This occasionally affects some of the perishable ingredients we had bought in bulk for keep. To preserve the ingredients, they are kept in the fridge or freezer for a period which sometimes changes the taste of the product and also means locking up our capital. Sometimes the ingredients are processed into other products which can't be used for their original purpose and that has to mean spending another money to buy them fresh again. Others also got rotten and we have to throw them away, and you know all this is money*  
(A Grade 3 independent restaurant manager).

These findings on worker absenteeism lend support to Foster and Vaughan (2005) in their assertion that when workers are absent from their assigned tasks in the workplace, the efficiency and effectiveness of the workplace is reduced, creating more cost for the employer in the preparation and

delivery of goods or services to the customers. The findings also corroborate the observation in other studies that a rise in worker absenteeism does affect the organization involved, as there is always interruption in production leading to a decrease in productivity or production lost (Hoel et al., 2003 and Niedl, 1995 cited by Bloisi, & Hoel, 2008). This finding has implications for the hotels and independent restaurants especially when it leads to staff turnover especially when the staff is not able to cope with the stress. Beyond this, the affected facilities may be forced to shut down.

### *Loss of reputation*

Like most businesses, a good reputation is recognized as one of the greatest assets of hotels and restaurants and a major source of competitive advantage (Heil, 2018). A hotel or restaurant's reputation is grounded on the perception of its characteristics, performance, and behaviour. These components give a reflection of how positively or negatively the facility is viewed by its stakeholders who are employees, customers and society at large (Larkin, 2003). A good reputation of an organization helps the business to earn a continuous trust and confidence from its customers, investors, suppliers, regulatory bodies, employees and other stakeholders for a competitive advantage (Gaultier-Gaillard, et al., 2009). A bad reputation on the other hand, ends in a loss of customers, unmotivated employees, stakeholder satisfaction and virtually, the collapse of the business.

From the interviews, a manager who revealed loss of reputation as an effect of staff injuries and illnesses on restaurants related it to Heil (2018), and Larkin (2003) whose assertions that the bad reputation of a business (restaurant)



occurs when the perception of that facility falls below the expectation of its stakeholders. He stated:

*Hmmm, our restaurant lost the trust of our staff, customers, suppliers and the community in terms of safety. I will say, our restaurant lost that reputation because we failed all these groups of people who helped us grow as a business over these 25 years. The frequency of fire gushing the facilities, workers' injuries, illnesses and all that in these few years had caused some of our customers and suppliers to stop patronizing the restaurant for the fear of their safety, I think. This forced us to sometimes pick our supplies from suppliers ourselves instead of them coming to deliver to us. This, we were doing at our own cost in terms of transportation cost and time. We noticed some workers were demoralized to the extent that; they tried saying goodbye to the job. The name of our restaurant was on the lips of the community in a bad way. This cost us so much in terms of bad publicity. It cost us so much in bringing the restaurant back to its productive status again (A Grade 3 restaurant manager).*

One more effect of injuries of kitchen staff on the reputation of a hotel was with regard to the recruitment of new staff. The issue of recruiting new staff became problematic for the hotel because of the negative publicity. This is how a manager lamented:

*Some of the kitchen staff stopped working in our hotel after observing and encountering several injuries which were sometimes severe in the hotel. Trying to recruit staff to fill their positions was becoming difficult. Some come within a month or two, and they leave. This was becoming a problem until we got to know that there was that negative publicity out there about the hotels in regard to the injuries that have been occurring in the hotel. From some of the workers, there was a belief that the hotel was built with “juju” money and the frequent occurrence of the injuries in the facility was a ritual obligation for human blood to be shed for the business to grow. It took grace to redeem our image and to stay in business till today (A 2-Star hotel manager).*

These narratives support what was once said by a former Chairman and CEO of Berkshire Hathaway; Warren Buffett: “It takes twenty years to build a reputation and five minutes to ruin it”. The narrative of the 2-Star Hotel Manager on the loss of the hotel’s reputation confirms Lebeau and Duguay (2013) who claim that a negative reputation of a facility due to a workplace injury can affect the ability to recruit new staff.

### **Positive Outcomes of Injuries and Illnesses of Staff in Hotels and Restaurants**

Aside all these negative effects of injuries and illnesses of staff on hotels and restaurants mentioned by the managers of the selected facilities, there were also positive outcomes of the injuries and illnesses on the hotels and restaurants. From the analysis of the data, it came up that the management applied or started

to enforce the safety and health measures stipulated in the Factories, Offices and Shops Act, Act 328, Ghana Labour Act, Act 651 and ILO guidelines (ILO, 2009) and Ghana Labour Act, Act 651 to control or prevent the reoccurrence of the injuries and illnesses of staff in their facilities after incurring cost in treating or compensating their injured or sick staff. Typical examples of these measures are presented below:

*Following the severe injury of our kitchen staff, we as management have changed the floor tiles to a non-slippery one. This is to avoid staff slipping again to result in such a loss we encountered as a restaurant from the injury. We have also engaged the fire service to be taking the staff through fire safety tips every year (A Grade 3 independent restaurant manager).*

*After such an injury, the hotel has compelled with all supervisors to intensify their supervisory roles for the staff to follow the right procedures in carrying out their tasks in the kitchen. This is to prevent the reoccurrence of any form of injury in this facility (A 2-Star hotel manager).*

*Management now organizes safety and health training for all our staff every year so they are careful and be mindful of their dealings in the kitchen. The training is to help them to be conscious of their safety and do things right. In the end, if not prevented, it will reduce the incidence of staff*

*injuries or any form of ailments in the restaurant again (A Grade 1 independent restaurant kitchen).*

*Workers are provided with protective clothing regularly after the injury that nearly took the life of the kitchen staff.*

*We realized that the intensity of the burn will have been reduced if she was in protective clothing. We now provide the staff with non-slippery footwear, chef's jacket, and aprons (A 1- Star hotel manager).*

The findings from this section have added to the debate that facilities suffer from some effects of hazards faced by staff in workplaces as indicated in the Henrich Domino Theory, Danna and Griffin framework for health and well-being in the workplace and Bird and Loftus Sequence of Accident Causative Theory underpinning this study. All these effects arise as a result of the injuries and illnesses encountered by workers. The finding is in line with the study's conceptual framework.

### **Summary**

The chapter examined the effects of injuries and illnesses of kitchen staff on hotels and restaurants in Accra. First of all, the chapter focused on the nature of staff injuries and illnesses recorded in the restaurant kitchens. It emerged that there were records of minor and major cases of injuries and illnesses of the kitchen staff in both the hotels and restaurants in Accra. The second part of the discussion looked at the effects of injuries and illnesses of kitchen staff on hotels and restaurants. It had been revealed that the injuries and illnesses suffered by the kitchen staff have had positive and negative impacts on the hotels and



restaurants. The findings of this chapter supported the study's conceptual framework presumptions that organizations receive their fair share of the consequences of the presence of hazards in the work environment.



## CHAPTER TEN

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

This chapter presents the summary, conclusion and recommendation of the study. The summary of the methodology employed for the study on occupational safety and health among restaurant kitchens is also provided in this chapter. The chapter further presents the contribution of this chapter to both theory and practice.

#### Summary of the Study

Generally, there is a dearth of information on occupational safety and health in restaurant kitchens in the Ghanaian context even though there are unfavourable working conditions (hazards) that could threaten the safety and health of workers. This study was aimed at assessing occupational safety and health in hotel and restaurant kitchens in Accra. Specifically, the study sought to:

1. identify the workplace safety and health hazards faced by kitchen staff in the hospitality industry;
2. identify the barriers to compliance with safety and health measures in restaurant kitchens;
3. ascertain the effects of the existing hazards on kitchen staff;
4. analyse the effects of injuries and illnesses and negative behaviours of kitchen staff on hotels and restaurants;
5. assess the control and preventive measures that are undertaken by staff to ensure safety and health in the restaurant kitchens; and

6. assess the control and preventive measures that are implemented by the restaurant kitchens.

The conceptual framework which guided the study was based on Henrich's (1931) Domino theory, Bird and Loftus's (1976) domino sequence of accident causative theory and Danna and Griffin's (1999) framework for health and well-being in the workplace. The study was situated in the pragmatism paradigm. Accordingly, an explanatory sequential mixed-method approach was adopted for the study. The study was based on data collected through structured interviews with 320 kitchen staff, in-depth interviews with 10 managers and observations carried out in 94 independent restaurants and hotels in Accra. A multi-stage sampling technique was used to select the respondents from the hotels and independent restaurants. While convenience sampling was used to select the kitchen staff, the managers were purposively selected. The data was collected between the period of 10<sup>th</sup> June, 2021 to 31<sup>st</sup> August, 2021 with the support of two field assistants.

Among the statistics applied on the data collected were the Chi-square and Analytic Hierarchy Process. The data from the in-depth interviews were manually transcribed and presented thematically.

### **Main Findings**

The following is a summary of the major findings of the study:

Five main hazards namely; physical hazard, chemical hazard, ergonomic hazard, psychosocial hazard, and biological hazard were encountered by staff in the restaurant kitchens. Physical hazard was the leading condition faced by the kitchen staff (41.0%) with biological hazard being the least condition (4.0%). Physical hazard was about ten times more encountered by a kitchen staff than

biological hazard. Gender and staff positions in the restaurant kitchens were the only profiles of respondents that had a statistically significant relationship with the hazards.

Among the measures employed by staff to ensure their safety and health in the restaurant kitchen were updating of knowledge and skills on safety and health, use of PPE, reporting hazards or accidents, and following safety and health instructions or procedures. On the whole, the use of PPE was found to be the main safety and health measure carried out by the staff (44.7%), even though, they were not used appropriately. The study also discovered that the majority (71.6%) of the kitchen staff were without basic first aid training. Yet some staff administered their treatment when they got hurt. Grades of hotel restaurants was the only employment and facility-related characteristics that had statistically significant relationship with the measures employed by staff to ensure their safety and health in the restaurant kitchens.

In accordance with the modified Domino theory, management of the hotels and restaurants were noted to have provided some safety and health measures in the restaurant kitchens. These included electrical safety, welfare matters, falls, cuts and accident records, firefighting and evacuation, ergonomic safety and ventilation, lighting and sound-absorption. Measures on first aid/medical assistance were generally (30.6%) not implemented by the facilities. Most (62.8%) of the first aid boxes in the hotels and restaurants were not fully stocked with the needed medical materials and there were just a few (19.1%) first aiders to administer treatment in the facilities. Evidence from the study also revealed that except for supervision and maintenance of equipment and machinery, not all the hotels and restaurants had an occupational safety and



health policy, ran risk assessments, organized safety and health training or provided PPE for their staff. Specifically, on the provision of PPE, it emerged that some of the facilities shared this responsibility with their staff and in others, staff took every responsibility of providing their protective equipment.

Staff were found to face two main barriers in terms of safety and health compliance namely; institutional and individual barriers. The institutional barrier was the leading constraint to staff compliance with safety and health in the restaurant kitchens. Lack of management commitment and work pressure were the key institutional constraints to staff compliance with safety and health measures in the kitchen. The individual barriers were primarily behavioural in nature. On the part of the facilities, the study found that management non-compliance with the required safety and health measures were as a result of their ignorance of the regulation on safety and health, staff attitude and cost involved in carrying out the safety and health measures in the facilities.

The study detected that the existing hazards in the restaurant kitchens had varied effects on the majority of the staff (95.0%). The main health conditions resulting from the hazards faced by the staff were cuts, burns, headaches and stress. Often the injuries and illnesses were considered minor and were treated with just first aid. The age of a hotel or independent restaurant was the only variable that had a significant effect on hazards encountered by the staff.

The study also found that the injuries and illnesses recorded by the hotels and restaurants affected the facilities directly and indirectly in terms of cost. The direct costs were incurred through salary losses and the payment of medical bills and benefits to the affected staff. The indirect costs resulted from production

losses, and loss of reputation. The study further discovered that the injuries and illnesses suffered by the kitchen staff also had positive impacts on the hotels and restaurants. Out of the cost borne by the facilities in connection to the staff injuries and illnesses, management tend to apply or effectively implement the required safety and health measures in the kitchens.

### **Conclusions**

Based on the findings of the study, it can be concluded that staff faced multiple hazards in the course of discharging their duties in the restaurant kitchens in Accra. These ranged from physical hazards, psychosocial hazards, ergonomic hazards, chemical hazards and biological hazards. The types of hazards faced by staff do not differ significantly between the types of restaurant kitchens. It can be said that identifying various hazards in this study is typical of what was established in developing countries.

It can also be concluded that both employers and employees put in efforts in terms of control and preventive measures to ensure safety and health in the restaurant kitchens. Specifically, with regard to the employees, the use of PPE was the main safety and health measure that was carried out, although not used appropriately. Staff do not also have training in basic first aid management.

The employers ensured safety and health in their facilities specifically on matters of electrical safety, welfare, falls, cuts and accident records, firefighting and evacuation, ergonomic safety and ventilation, lighting and sound absorption. Measures relating to the provision of first aid or medical assistance, occupational of safety and health policy, safety and health training, provision of PPE and running of risk assessments were not sufficiently considered in the hotels and restaurants in Accra.

Further, it can be concluded that both employers and employees are partly responsible for the injuries and illnesses suffered in the kitchens because the barriers to staff compliance with safety and health measures in the restaurant kitchens were institutionally and individually related. Management's lack of commitment and work pressure prevented staff from complying with safety and health in the kitchen. Staff non-compliance with safety and health is also hindered by their behaviour. It can also be concluded that the hotels' and restaurants' violations of the safety and health measures were as a result of their ignorance of the safety and health regulations, staff attitude, and the cost involved in carrying out the safety and health measures. These emphasise the usefulness of the conceptual framework underpinning this study. The framework postulates that both human and managerial attributes are factors that excite hazards to cause injuries or damages in workplaces.

It can further be concluded that hazards faced by staff of hotel and independent restaurant kitchens in Accra have had physical, psychological and behavioural effects on staff. Minor injuries and illnesses were mostly the health conditions encountered by the kitchen staff.

The study finally concludes that the injuries and illnesses recorded in the hotels and restaurants had both positive and negative effects on the facilities. The negative effects have led to production losses and loss of reputation. Salary cost and medical cost or benefits had also been incurred by the facilities. On the positive side, the cost incurred by the hotels and restaurants as a result of the staff injuries and illnesses had pushed for the implementation and enforcement of the safety and health measures by the facilities.

### Recommendations for Policy and Practice

Based on the main findings and conclusions drawn from the study, the following recommendations for policy and practice are made to augment occupational safety and health in hotels and restaurants and the hospitality industry as a whole.

Given that there were hazards and records of workplace injuries and illness among the kitchen staff, it is also recommended that all kitchen staff should take personal responsibility for their safety and health. They should endeavour to consciously and effectively carry out all necessary safety and health measures to help control or prevent the existing hazards from resulting in harm. GTA and Ghana Fire Service and GSA should also intensify their supervision of the activities of hotels and restaurants in order to minimize or eliminate hazards and their associated causes in the restaurant kitchens. This is to help curb or prevent the occurrence of accidents and work-related injuries and illnesses.

With the kitchen staff who were not using the appropriate PPE in the course of their work, it is recommended that management provides all the needed PPEs for their staff. It is also recommended that managers of the hotels and independent restaurants should strictly enforce and supervise the appropriate use of all PPE by all kitchen staff. Management can also introduce award/incentive schemes to motivate their staff to always use the right protective equipment in order not to encounter accidents leading to injuries and illnesses in the course of their work. The hotels and independent restaurants with the assistance of the National Restaurant Association and Ghana Hotels Association should develop and implement safety and health education



programmes for all kitchen staff. This would increase staff awareness of hazards and the importance of using the right protective equipment in the course of discharging their duties in the kitchens.

Since cost was a hindrance for facilities to organize safety and health training for their staff, there is a need for the National Restaurant Association and Ghana Hotels Association to help in the organization of workshops or in-service safety and health training for staff in the hotels and independent restaurants kitchens. This will help reduce the cost incurred by the hotels and restaurants when they have to organise such training for their staff alone.

The study revealed that most of the facilities did not have first aiders and in some cases, workers were administering their treatment even when most of them did not have basic first aid training. In this regard, it is recommended that GTA should make it a requirement for all kitchen staff to have basic first aid certificate so that they can effectively administer treatment when there is a need. In line with this, the National Restaurant Association, Ghana Hotels Association and GTA should collaborate with Ghana Health Service and Ghana Red Cross Society to help train and award the staff with the basic first aid certificate.

Drawing from the finding that ignorance of the regulation on safety and health measures was an impediment for hotels and restaurants to implementing safety and health measures on their premises, it is recommended that the Ministry of Employment and Labour Relations, in collaborating with GTA and the Department of Factories Inspectorate should organize workshops and seminars for managers of the facilities on the Factories, Offices and Shops Act, Act 328 and Ghana Labour Act, Act 651. The workshops and seminars should emphasize the need for the managers to have occupational safety and health

policy in their facilities, training of staff on proper use of PPEs, basic first aid and the necessity of running risk assessments to help eliminate or minimize workplace injuries and illnesses in the restaurant kitchens.

It is recommended that the Ministry of Employment and Labour Relations should set up an inspectorate team to collaborate with GTA and the Department of Factories Inspectorate to frequently visit the hotels and restaurants to enforce their implementation of all safety and health measures delineated in Act 651 and Act 328 of the Ghana Labour Act and Factories, Offices and Shops Act respectively. Ghana Fire Service should continue to sensitize hotel and restaurant managers on the need to effectively play their expected roles in terms of safety. As this happens, management will show more commitment to the safety and health of their staff.

#### **Recommendations for Future Research**

The study aimed at assessing occupational safety and health in restaurant kitchens in Accra. Although insightful findings emerged from the study, the following areas need to be further explored in future research.

The study focused on occupational safety and health in hotels and independent restaurants kitchens in Accra. There are also insufficient studies on occupational safety and health in snack bars, fast foods, pubs and the food service sections of restaurants in Ghana. The study therefore proposes that a further study is conducted to investigate issues on occupational safety and health in these sectors of the hospitality industry.

With regards to the fact that the kitchen staff had encountered severe injuries and illnesses in the restaurant kitchens, future research is recommended to consider the use of an in-depth interview to help bring out a deeper

understanding of the experiences of these afflicted staff on their mental and social life.

Measures relating to first aid appeared to be insufficient in ensuring safety and health in the restaurant kitchens even though, it is an important measure needed to handle injuries and illnesses to save the lives of the kitchen staff. It is therefore important for future studies to be conducted to investigate issues on first aid in relation to occupational safety in restaurant kitchens. This will help to unearth the challenges faced by management in carrying out this safety and health measure in hotels and independent restaurants.

### **Contribution to Knowledge**

This study has contributed to knowledge by highlighting the measures carried out by hotels and restaurants in ensuring safety and health in the restaurant kitchens. The study had specifically brought to fore the directives of the Factories, Offices and Shops Act, Act 328 and Ghana Labour Act, Act 651 that have been observed by staff and management to ensure safety and health in hotels and restaurants in Accra. It has also indicated the setbacks to the implementation or compliance of these safety and health measures by the management and staff of the facilities.

Another contribution made by this study relates to highlighting the effects of workplace hazards on restaurant kitchen staff and the subsequent aftermaths of the risk factors on hotels and restaurants. In previous studies that have looked at workplace hazards, the focus on the effects of the hazards ended with the staff and not management. This study had, however, highlighted the consequences of workplace hazards faced by staff on hotels and restaurants kitchens.

This study added to the discourse on the effects of staff injuries and illnesses on facilities. Specifically, the study revealed that staff injuries and illnesses resulting from workplace hazards do not only have negative impacts on the hotels and restaurants but there are positive outcomes as well. That is, out of the negative effects of staff injuries and illnesses on the hotel and independent restaurants, the management of the facilities turned to observe the safety and health measures required to ensure safe working environments.





**BIBLIOGRAPHY**

- Ab Latif, A. F., Chik, C. T., & Aminudin, N. (2011). Young kitchen staff safety in fast food restaurants: Conceptual Paper. Retrieved on 21/06/2020 from [https://www.researchgate.net/profile/NorlizaAminudin/publication/301227940\\_Young\\_Kitchen\\_Staffs\\_Safety\\_in\\_Fast\\_Food\\_Restaurants\\_Conceptual\\_Paper/links/570dfc9e08aed31341cf888d/Young-Kitchen-Staffs-Safety-in-Fast-Food-Restaurants-Conceptual-Paper.pdf](https://www.researchgate.net/profile/NorlizaAminudin/publication/301227940_Young_Kitchen_Staffs_Safety_in_Fast_Food_Restaurants_Conceptual_Paper/links/570dfc9e08aed31341cf888d/Young-Kitchen-Staffs-Safety-in-Fast-Food-Restaurants-Conceptual-Paper.pdf)
- Abrams, H. K. (2012). A short history of occupational health. *Journal of Public Health Policy* 2, 34–80.
- Abubakar, R. L. (2017). *Influence of occupational hazards on employees' job performance in housekeeping department of budget hotels in Kaduna Metropolis, Nigeria*. (Master's thesis. Kenyatta University. Kenya). Retrieved on 18/08/2019 from <https://ir-library.ku.ac.ke/handle/123456789/14140>
- Adanse, J., Atinga, A. C., & Yamga, L. T. (2017). Investigating the health and safety measures in the kitchen: A study of some selected second cycle institutions in Bolgatanga Municipality of Ghana. *Journal of Tourism and Hospitality Management* 5(2), 45-55.
- Adei, D., & Kunfaa, E. Y. (2007). Occupational health and safety policy in the operation of wood processing industry in Kumasi, Ghana. *Journal of Science and Technology* 27(2), 159-171.
- Adhikari, P. (2015). Errors and accidents in the workplaces. *Sigurnost* 57(2), 127 – 137.

- Adiele, K. C., & Kenneth-Adiele, N. (2017). Service speed and patronage of quick-service restaurants in Port Harcourt. *International Journal of Marketing and Communication Studies* 2(1), 32-38.
- Afosah, G. M. (2014). Health hazards of casual workers in building construction industry in Ghana: A case study of the Accra Metropolis. Unpublished Master's Thesis. Kwame Nkrumah University of Science and Technology. Kumasi, Ghana.
- Ahmad, I., Qadir, S., Yasir, M., Irfanullah, M., Khan, M. A., Aslam, S. Z., Iqbal, J. A. J., Sikander, I., & Waqas, M. (2012). Knowledge, attitude and practice related to occupational health and safety among textile mills workers in Dera Ismail Khan. *Gomal Journal of Medical Sciences* 10(2), 222-226.
- Ahmad, I., Sattar, A., & Nawaz, A. (2016). Occupational health and safety in industries in developing world. *Gomal Journal of Medical Sciences* 14(4), 222-228.
- Aksorn, T., & Hadikusumo, B. H. W. (2007). The unsafe acts and the decision-to-err factors of thai construction workers. *Journal of Construction in Developing Countries* 12(1), 1-25
- Alamgir, H., Swinkels, H., Yu, S., & Yassi, A. (2007). Occupational injury among cooks and food service workers in the healthcare sector. *American Journal of Industrial Medicine* 50, 528-535.
- Alfers, L., & Abban, R. (2011). Occupational health and safety for indigenous caterers in Accra, Ghana. Accessed On 20/8/2019 from [https://www.wiego.org/sites/default/files/publications/files/Alfers\\_Abban\\_OHS\\_Indigenous\\_Caterers\\_2011.pdf](https://www.wiego.org/sites/default/files/publications/files/Alfers_Abban_OHS_Indigenous_Caterers_2011.pdf)

- Aliyu, A. A., Bello, M. U., Kasim, R., & Martin, D. (2014). Positivist and non-positivist paradigm in social science research: Conflicting paradigms or perfect partners? *Journal of Management and Sustainability* 4(3), 79-95
- Alli, B. O. (2008). *Fundamental principles of occupational health and safety*. (2<sup>nd</sup> ed.) International Labour Office. Geneva, Switzerland.
- Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T., & Popoola, B. F. (2016). Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers. *Bio Med Central (BMC) Res Notes* 9(71), 1-14. DOI 10.1186/S13104-016-1880-2
- Ambardar, A. (2015). Occupational safety and health of laundry employees in hotel industry. *International Journal of Hospitality & Tourism Systems* 8(1), 32-39.
- Ambardar, A., & Raheja, K. (2017). Occupational safety and health of hotel housekeeping employees: A comparative study. *International Journal of Hospitality & Tourism Systems*, 10(2), 22-31.
- Ametepoh, R. S. (2011). *Occupational health and safety of informal services in the Sekondi-Takoradi Metropolitan area*. (Master's thesis. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. Retrieved on 04/02/2019 from [https://www.researchgate.net/publication/343995737\\_Occupational\\_Health\\_Hazards\\_and\\_Safety\\_of\\_the\\_Informal\\_Sector\\_in\\_the\\_Sekondi-Takoradi\\_Metropolitan\\_Area\\_of\\_Ghana](https://www.researchgate.net/publication/343995737_Occupational_Health_Hazards_and_Safety_of_the_Informal_Sector_in_the_Sekondi-Takoradi_Metropolitan_Area_of_Ghana)

Amfo-Otu, R., & Agyemang, J. K. (2016). Occupational health hazards and safety practices among the informal sector auto mechanics. *Applied Research Journal*, 1(4), 59-69.

Amponsah-Tawiah, K., Akomeah, M., Ntow, O., & Mensah, J. (2016). Health and safety management and turnover intention in the Ghanaian mining sector. *Safety and Health at Work* 7, 12-17.

Amran, F. W., Ghazali, H., & Hashim, S. (2019). Influence of working environment, workload and job autonomy towards job stress: A case of casual dining restaurant employees in Klang Valley, Malaysia. *International Journal of Academic Research in Business and Social Sciences* 9(5), 744–755. DOI: 10.6007/IJARBS/V9-I5/6003

Andola, O. C. (2016). Potential workplace risks and hazards encountered by factory employees in Eldoret Municipality, Kenya. *International Journal of Engineering and Advanced Technology Studies* 4(3), 18-30.

Annan, J., Addai, E. K., Tulashie, S. K. (2015). A call for action to improve occupational health and safety in Ghana and a critical look at the existing legal requirement and legislation. *Safety and Health at Work* 6, 146-150. [Http://Dx.Doi.Org/10.1016/J.Shaw.2014.12.002](http://dx.doi.org/10.1016/j.shaw.2014.12.002)

Ansah, E. W. (2015). *Analyses of occupational health and safety, accident and safety, safety measures and disease prevention*. Doctoral thesis. University of Cape Coast. Cape Coast. Retrieved on 18/04/2019 from <https://www.researchgate.net/publication/313656576>



Asumeng, M., Asamani, L., Afful, J., & Agyemang, C. B. (2015). Occupational safety and health issues in Ghana: Strategies for improving employee safety and health at workplace. *International Journal of Business and Management Review* 3(9), 60-79.

Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 1, 385-405.

Awal, Z. I., & Hasegawa, K. (2017). A Study on accident theories and application to maritime accidents. *Procedia Engineering* 194, 298 – 306.

Awunor, N. S. (2011). *Health risk assessment of factory workers in the bottling and brewing industries in Benin City, Edo State - A Comparative Study*. Unpublished dissertation. University of Benin Teaching Hospital. Benin.

Aynalem, S., Birhanu, K., & Tesefay, S. (2016). Employment opportunities and challenges in tourism and hospitality sectors. *Journal of Tourism & Hospitality* 5(6), 1-5. DOI: 10.4172/2167-0269.1000257

Baba, V. V., Jamal, M., & Tourigny, L. (1998). Work and mental health: A decade in Canadian research. *Canadian Psychology* 39, 94-107.

Badekale, O. F. (2012). Effects of organizational health and safety policies on employees' performance in Larfarge (Wapco) Plc. Ewekoro, Ogun State. (Master's thesis. University Of Ibadan, Nigeria). Retrieve on 16/07/2019 from [https://www.academia.edu/2462477/EFFECTS\\_OF\\_ORGANIZATIONAL\\_HEALTH\\_AND\\_SAFETY\\_POLICIES\\_ON\\_EMPLOYEES\\_PERFORMANCE](https://www.academia.edu/2462477/EFFECTS_OF_ORGANIZATIONAL_HEALTH_AND_SAFETY_POLICIES_ON_EMPLOYEES_PERFORMANCE)

- Baum, T. (2013). International perspectives on women and work in hotels, catering and tourism. Geneva: International Labour Organization. Retrieved on 18/08/2019 from [https://www.ilo.org/gender/Information/resources/WCMS\\_209867/lang--en/index.htm](https://www.ilo.org/gender/Information/resources/WCMS_209867/lang--en/index.htm)
- Belhassen, Y., & Shani, A. (2012). Hotel workers' substance use and abuse. *International Journal of Hospitality Management* 31, 1292–1302.
- Bello, S. R. (2012). Workplace hazards risks & control. Retrieved on 21/02/2020 from [https://www.academia.edu/3849001/Workplace\\_Hazards\\_Risks\\_and\\_Controls](https://www.academia.edu/3849001/Workplace_Hazards_Risks_and_Controls)
- Bhagawati, B. (2015). Basics of occupational safety and health. *Journal of Environmental Science, Toxicology and Food Technology* 9(8), 91-94.
- Bhatia, A., & Singla, S. (2019). Ergonomic evaluation and customized design of kitchen. *International Journal of Innovative Technology and Exploring Engineering*, 8(9), 1033-1039.
- Bhusnure, O. G., Dongare, R. B., Gholve, S. B., & Giram, P. S. (2018). Chemical hazards and safety management in pharmaceutical industry. *Journal of Pharmacy Research*, 12(3), 357-369.
- Bindu, E. S. H., & Reddy, M. V. (2016). Perception on work environment stress by cooks in commercial kitchens. *International Journal of Science and Research* 5(10), 1320-1323.
- Bird, F., & Loftus, R. (1976). *Loss control management*. Loganville, GA: Institute Press.

- Biswas, A., Harbin, S., Irvin, E., Johnston, H., Begum, M., Tiong, M., Apedaile, D., Koehoorn, M., & Smith, P. (2021). sex and gender differences in occupational hazard exposures: A scoping review of the recent literature. *Current Environmental Health Reports* 8, 267–280.
- Bloisi, W., & Hoel, H. (2008). Abusive work practices and bullying among chefs: A Review of the literature. *International Journal of Hospitality Management* 27, 649–656.
- Bloisi, W. M. B. (2012). *Bullying and negative behaviour in commercial kitchens*. Unpublished Doctor of Philosophy Thesis, University of Manchester, Manchester.
- Bobo, S. (2017). *Assessment of occupational health and safety practices and its associated factors among star rated hotels housekeeping workers in Addis Ababa, Ethiopia*. Unpublished Master's Thesis. Addis Ababa University. Ethiopia.
- Bonsu, W. S., Adei, D., & Agyemang-Duah, W. (2020). Exposure to occupational hazards among bakers and their coping mechanisms in Ghana. *Cogent Medicine* 7(1), DOI:10.1080/2331205X.2020.1825172
- Boyce, C. (2006). Conducting In-Depth Interviews: A guide for designing and conducting In-Depth interviews for evaluation input. Retrieved on 23/07/2021 from [https://nyhealthfoundation.org/wp-content/uploads/2019/02/m\\_e\\_tool\\_series\\_indepth\\_interviews-1.pdf](https://nyhealthfoundation.org/wp-content/uploads/2019/02/m_e_tool_series_indepth_interviews-1.pdf)
- Buchanan, S., Vossen, P., Krause, N., Moriarty, J., Frumin, E., Shimek, J. A. M., Mirer, F., Orris, P., & Punnett, L. (2010). Occupational injury disparities in the US hotel industry. *American Journal of Industrial Medicine* 53, 116–125.

Burton, J. (2010). WHO healthy workplace framework: Background and supporting literature and practices. Retrieved on 19/02/2019 from <https://apps.who.int/iris/rest/bitstreams/517787/retrieve>

Cartography and Remote Sensing Unit, (2022). Department of Geography and Regional Planning, University of Cape Coast. Cape Coast.

Cherono, L. (2011). *Occupational accidents in hotels within Eldoret Town, Kenya: Awareness and prevention*. (Master's thesis, Kenyatta University. Kenya.) Retrieved on 10/04/2019 from <https://ir-library.ku.ac.ke/handle/123456789/3875>

Chin, B. (2014). International hazard datasheet on occupation: Dishwasher. Retrieved on 8/12/2019 from <https://www.cdc.gov/niosh/nioshtic-2/20048225.html>

Costa, G. (2010). Shift work and health: current problems and preventive actions. *Safety Health Work*. 1(2), 112-123. DOI:10.5491/SHAW.2010.1.2.112

Commonwealth of Australia. (2012). Follow health, safety and security procedures. Retrieved on 18/04/2019 from [https://www.angliss.edu.au/siteassets/pdf-files/industry-training/learner\\_workbooks/sitxohs001b\\_ohs\\_2012-1.pdf](https://www.angliss.edu.au/siteassets/pdf-files/industry-training/learner_workbooks/sitxohs001b_ohs_2012-1.pdf)

Constitution of the Republic of Ghana (1992). Economic Rights. Retrieved on 7/7/2019 from <https://www.dennislawgh.com/law-preview/the-1992-constitution-of-ghana/430>

Cox, T., & Griffiths, A. J. (1995). The nature and measurement of work stress: theory and practice. In *the Evaluation of Human Work: A*



*Practical Ergonomics Methodology*; Wilson, J.R., Corlett, E.N., Eds.; Taylor & Francis: London, UK, 1995.

Creswell, J. W. (2012). *Planning, conducting, and evaluating quantitative and qualitative research*. (4<sup>th</sup> ed.). London: Pearson.

Creswell, J. W. (2014). *Research Design-Qualitative, quantitative and mixed method approaches* (4<sup>th</sup> ed). Thousand Oaks, CA: Sage.

Cudjoe, F. S. (2011). *An assessment of occupational health and safety practices on job performance at the Tetteh Quarshie memorial hospital, Mampong-Akuapem*. (Master's thesis, Kwame Nkrumah University of Science and Technology). Ghana. Retrieved on 7/7/2021 from <http://ir.knust.edu.gh/xmlui/handle/123456789/4225?show=full>

Danna, K., & Griffin, R. W. (1999). Health and well-being in the workplace: a review and synthesis of the literature. *Journal of Management*, 25(3). 357-384. DOI: 10.1177/014920639902500305

Dareker, S., & Peshave, M. (2016). A study of importance of kitchen designing in standalone restaurants. *International Journal of Research in IT & Management*, 6(6), 100-106.

DaRos, J. (2011). Preventing workplace injuries commonly sustained by hotel guestroom attendants. Retrieved On 23/07/2013 from <https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=2098&context=thesesdissertations>

DeCamp, W., & Herskovitz, K. (2015). The theories of accident causation. in: security supervision and management. Retrieved On 28/08/2019 from <https://www.scirp.org/%28S%28lz5mqp453edsnp55rrgjt55%29%29/rference/referencespapers.aspx?referenceid=3003322>

Department of Education of the Queensland Government (2018). School risk matrix: assessing the severity of risk. Retrieved on 13/11/2020 from <https://www.riskassess.com.au/docs/RiskMatrix.pdf>

Dhanabal, S., Karuppiah, K., Mani, K. K. C., Rasdi, I., & Sambasivam, S. (2016). A need for new accident theories in Malaysia? *Malaysian Journal of Public Health Medicine* 16 (2), 1-4.

Ebeid, F., Kaul, T., Neumann, K., & Shane, H. (2003). Workplace abuse: Problems and consequences. *International Business & Economics Research Journal* 2(6), 75-86.

Erdogan, B., Ozyilmaz, A., Bauer, T. N., Emre, O. (2018). Accidents happen: Psychological empowerment as a moderator of accident involvement and its outcomes. Retrieved On 20/09/2019 from [https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1090&context=busadmin\\_fac](https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1090&context=busadmin_fac)

Esterhuyzen, E. (2019). Small business barriers to occupational health and safety compliance. the Southern African. *Journal of Entrepreneurship and Small Business Management*, 11(1), 1-8.

El-Amir, J., & Omar, A-M. (2019). Investigating the relation between ergonomics and efficiency of hotel kitchen staff. *Journal of Faculty of Tourism and Hotels-University of Sadat City*, 3(1), 110-121.

EL-Menyar, A., Mekkodathil, A., & Al-Thani, H. (2016). Occupational injuries: Global and local perspectives. *Nepal Journal of Epidemiology* 6(2), 560-562.

- Eyayo, F. (2014). Evaluation of occupational health hazards among oil industry workers: A case study of refinery workers. *Journal of Environmental Science, Toxicology and Food Technology*, 8(12), 22-53.
- Fernandez, Le., & Marley, R. M. (1998). *Applied Occupational Ergonomics: A Textbook*. Dubuque, Iowa, United States: Kendall-Hunt Publishing.
- Fischer, M., Spessert, B., Emmerich, E. (2014). Noise reduction measures of noisy kitchen devices and evidence of their improvement by an objective analysis of spontaneous EEG measurements. Retrieved on 12/12/2019 from [https://www.acoustics.asn.au/conference\\_proceedings/INTER\\_NOISE2014/papers/p49.pdf](https://www.acoustics.asn.au/conference_proceedings/INTER_NOISE2014/papers/p49.pdf)
- Foster, W. H., & Vaughan, R. D. (2005). Absenteeism and business costs: Does substance abuse matter? *Journal of Substance Abuse Treatment*, 28, 27–33.
- Fox, A., Smith, B. N., & Vog, D. (2016). The relationship between anticipated stigma and work functioning for individuals with depression. *Journal of Social and Clinical Psychology*, 35(10), 883-897
- Fraikue, F. B. (2016). Reasons for eating out and socio-demographic characteristics of customers. Retrieved on 12/08/2019 from <https://docplayer.net/103216589-Reasons-for-eating-out-and-socio-demographic-characteristics-of-customers.html>
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate Research Design in Education* (8<sup>th</sup> ed.). New York: McGraw Hill.
- Friend, M. A., & Kohn, J. P. (2018). *Fundamentals of occupational safety and health*. (7<sup>th</sup> ed). United States of America: Scarecrow Press, Inc.

Frone, M. R. (2008). Employee alcohol and illicit drug use: Scope, causes, and organizational consequences. In Cooper, C. L., & Barling, J. (Eds). *Handbook of Organizational Behavior*. (pp.519-540). Thousand Oaks, CA: Sage.

Frost, S. (2016). How to respond to high employee absenteeism. Retrieved on 09/02/2019 from <https://smallbusiness.chron.com/employees-poor-attendance-affect-workplace-11517.html>

Gabriel, J. M. O., Nwaeké, L. I., & Amah, E. (2019). Safety consciousness: An antidote to industrial accidents. *International Journal of Business and Management Invention*, 8(4), 01-09.

Gangai, K. N. (2014). Absenteeism at workplace: What are the factors influencing to it? *International Journal of Organizational Behaviour & Management Perspectives* 3(4), 1258-1265.

Gangopadhyay, S., Ray, A., Das, A., Das, T., Ghoshal, G., Banerjee, P., & Bagchi, S. (2003). A study on upper extremity cumulative trauma disorder in different unorganized sectors of West Bengal, India. *Journal of Occupational Health*, 45, 351-357.

Garcia, A. M., Boix, P., & Canosa, C. (2004). Why do workers behave unsafely at work? Determinants of safe work practices in industrial workers. *Occupational & Environmental Medicine*, 61, 239–246

García-Herrero, S., Mariscal, M. A., García-Rodríguez, J., & Ritzel, D. O. (2012). Working conditions, Psychological/physical symptoms and occupational accidents. Bayesian Network Models. *Safety Science*, 50, 1760–1774



Gaultier-Gaillard, S., Louisot, J. P., & Rayner, J. (2009). Managing reputational risk – From theory to practice. In: Klewes, J., Wreschniok, R. (eds) *Reputation Capital*. Springer, Berlin, Heidelberg.

Gawde, N. C. (2018). A study of musculoskeletal pain among hotel employees, India. *Journal of Ecophysiology and Occupational Health*, 18(1&2), 44-51 DOI 10.18311/Jeoh/2018/20012

Gaydos, M., Bhatia, R., Morales, A., Lee, P. T., Liu, S. S., Chang, C., Salvatore, A. L., MD, N. K., Minkler, M. (2011). Promoting health and safety in San Francisco's Chinatown restaurants: Findings and lessons learned from a pilot observational checklist. *Public Health Reports* 126, 62-69

Gizaw, Z., Gebrehiwot, M., Molla, Z. T. M. (2014). Assessment of occupational injury and associated factors among municipal solid waste management workers in Gondar Town and Bahir Dar City, Northwest Ethiopia, *Journal of Medicine and Medical Sciences*, 5(9), 181-192. DOI: [Http://Dx.Doi.Org/10.14303/Jmms.2014.103](http://dx.doi.org/10.14303/Jmms.2014.103)

Ghana Statistical Service (2015). Integrated business establishment survey. National employment report. Retrieved on 09/04/2020 from [https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/NATIONAL%20EMPLOYMENT%20REPORT\\_FINAL%20%2024-5-16.pdf](https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/NATIONAL%20EMPLOYMENT%20REPORT_FINAL%20%2024-5-16.pdf)

Ghana Statistical Service (2016). 2015 Labour Force Report – Ghana Statistical Service. Retrieved on 09/02/2020 from [https://www2.statsghana.gov.gh/docfiles/publications/Labour\\_Force/LFS%20REPORT\\_fianl\\_21-3-17.pdf](https://www2.statsghana.gov.gh/docfiles/publications/Labour_Force/LFS%20REPORT_fianl_21-3-17.pdf)

Ghana Statistical Service (2021). 2010 Population and Housing Census General Report Volume 3A: Population of Regions and Districts. Accessed on

14/11/2022 from [https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2021%20PHC%20General%20Report%20Vol%203A\\_Population%20of%20Regions%20and%20Districts\\_181121.pdf](https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2021%20PHC%20General%20Report%20Vol%203A_Population%20of%20Regions%20and%20Districts_181121.pdf)

Gleeson, D. (2001.) Health and safety in the catering industry. *Occupational Medicine*, 51(6), 385-391.

Gochfeld, M. (2005). Chronologic history of occupational medicine. *Journal of Occupational and Environmental Medicine* 47(2), 96-114.

Golembski, M., Sobanski, P., & Wojtkowiak, G. (2016). Employee motivations in maintaining occupational health on nine construction firms in Poland. *Global Management Journal*, 8(1), 94-100.

Graphic Online (2017). Supervisor abuses female employee at Marwako restaurant. Retrieved on 9/05/2022 from <https://www.graphic.com.gh/news/general-news/supervisor-abuses-female-employee-at-marwako-restaurant.html>

Grégoris, M., Deschamps, F., Salles, J., & Sanchez, S. (2017). Health assessment of self-employed in the food service industry. *International Journal of Occupational and Environmental Health* 23(3), 234–242.  
<https://doi.org/10.1080/10773525.2018.1470788>

Grinza, E. & Rycx, F. (2018). The impact of sickness absenteeism on productivity: New evidence from Belgian matched panel data. Retrieved on 20/08/2019 from <https://www.iza.org/publications/dp/11543/the-impact-of-sickness-absenteeism-on-productivity-new-evidence-from-belgian-matched-panel-data>

Ghana Tourism Authority (2020). *Catering and hotel directory*. Author.

Gyekye, S. A., & Salminen, S. (2011). Organizational safety climate: Impact of gender on perception of workplace safety. *International Journal of Psychology Research*, 6(5), 461-478.

Guevara, D. G., Guaman, A. R., Caisa, D., Chicaiza–Redin, V. E., Chasiluisa, F., & Nuñez, J. L (2017). The occupational health and safety system and its influence on labor performance: Hotel industry analysis in the city of Ambato. *Global Review of Research in Tourism, Hospitality and Leisure Management*. 3(1), 440-452.

Hämäläinen, P., Takala, J., & Boon Kiat, T. (2017). *Global Estimates of Occupational Accidents and Work-Related Illnesses 2017* (XXI World Congress on Safety and Health at Work, Singapore, Workplace Safety and Health Institute). Retrieved on 11/11/2019 from <https://www.icohweb.org/site/images/news/pdf/Report%20Global%20Estimates%20of%20Occupational%20Accidents%20and%20Workrelated%20Illnesses%202017%20rev1.pdf>

Hannerz, H., Tuchsén, F., & Kristensen, T. S. (2002). Hospitalizations among employees in the Danish hotel and restaurant industry. *European Journal of Public Health*, 12, 192-197

Harini, S., Sudarijati, & Kartiwi, N. (2018). Workload, work environment and employee performance of housekeeping. *International Journal of Latest Engineering and Management Research*, 3(10), 15-22

Haruyama, Y., Matsuzuki, H., Tomita, S., Muto, T., Haratani, T., Muto, S., & Ito, A. (2014). Burn and cut injuries related to job stress among kitchen workers in Japan. *Industrial Health*, 52, 113–120. DOI: 10.2486/Indhealth.2013-0143

Hassanain, M. A. (2009). Approaches To Qualitative Fire safety risk assessment in hotel facilities. *Structural Survey*, 27(4), 287-300. DOI 10.1108/02630800910985081

Health And Safety Authority (2012). Study On the Costs Incurred by Small Businesses as A Result of Workplace Injuries. Retrieved On 19/7/2020 From <https://besmart.ie/fs/doc/Indecon%20Final%20Report%20-%2019%20Nov%202012.pdf>

Heil, D. (2018). Reputation risk. the international encyclopedia of strategic communication. Retrieved on 11/11/2021 from [https://www.researchgate.net/publication/327877292\\_Reputation\\_Risk](https://www.researchgate.net/publication/327877292_Reputation_Risk)

Heinrich, H. W. (1931). *Industrial Accident Prevention* (1<sup>st</sup> Ed.). New York: Mcgraw Hill.

Holmgren, M. (2006). *Maintenance related incidents and accidents. aspects of hazard identification*. (Doctoral thesis, Luleå University of Technology. Sweden). Retrieved on 02/02/2020 from <http://ltu.diva-portal.org/smash/get/diva2:999877/FULLTEXT01.pdf>

Hosseinian, S. S., & Torghabeh, Z. J. (2012). Major theories of construction accident causation models: A literature review. *International Journal of Advances in Engineering & Technology*, 4(2), 53-66.

Horsu E. N., & Yeboah S. T. (2015). Consumer perception and preference of fast food: A study of tertiary students in Ghana. *Science Journal of Business and Management*. 3(1). 43-49. doi: 10.11648/j.sjbm.20150301.



Hrymak, V., & Pérezgonzález, J. D. (2007). The costs and effects of workplace accidents twenty case studies from Ireland. Retrieved On 20/09/2019 from <http://docplayer.net/18102633-The-costs-and-effects-of-workplace-accidents-20-case-studies-from-ireland.html>

Hsieh Y., Apostolopoulos, Y., Hatzudis, K., & Sönmez, S. (2014). Occupational exposures and health outcomes among Latina hotel cleaners. *Hispanic Health Care International* 12(1), 6-15. DOI: [10.1891/1540-4153.12.1.6](https://doi.org/10.1891/1540-4153.12.1.6)

Hughes, P., & Ferrett, E. (2013). Introduction to health and safety in construction (2<sup>nd</sup> ed.). Oxford: Elsevier publishing.

International Labour Organization (1981). C155 - Occupational Safety and Health Convention, 1981 (No. 155). Retrieved on 13/08/2019 from [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C155](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C155)

International Labour Organization (2006). Guidelines for implementing the occupational safety and health provisions of the Maritime Labour Convention. Retrieved on 09/05/2022 from [https://www.ilo.org/wcmsp5/groups/public/---ed\\_dialogue/-sector/documents/normativeinstrument/wcms\\_325319.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/-sector/documents/normativeinstrument/wcms_325319.pdf)

International Labour Organization (2009). *Guidelines on occupational safety and health management systems*. (2<sup>nd</sup> ed). Retrieved on 17/03/2020 from [https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/normativeinstrument/wcms\\_107727.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107727.pdf)

International Labour Organization (2011). ILO Introductory Report: Global Trends and Challenges on Occupational Safety and Health. XIX World

Congress on Safety and Health at Work: Istanbul Turkey. Retrieved on 14/11/2021 from [https://www.ilo.org/safework/info/publications/WCMS\\_162662/lang--en/index.htm](https://www.ilo.org/safework/info/publications/WCMS_162662/lang--en/index.htm)

International Labour Organization (2012). Estimating the economic costs of occupational injuries and illnesses in developing countries: Essential information for decision-makers. Retrieved on 7/5/2020 From [Www.Ilo.Org](http://www.ilo.org) > Documents > Publication > Wcms\_207690

International Labour Organisation (2014). Occupational Safety Health Environment (OSHE) Checklists. Retrieved on 13/11/2020 from [https://www.ilo.org/caribbean/projects/WCMS\\_250143/lang--en/index.htm](https://www.ilo.org/caribbean/projects/WCMS_250143/lang--en/index.htm)

International Labour Office (2015). Guidelines for implementing the occupational safety and health provisions of the Maritime Labour Convention, 2006. Retrieved on 7/02/2020 from [https://www.ilo.org/wcmsp5/groups/public/ed\\_dialogue/sector/documents/normativeinstrument/wcms\\_325319.pdf](https://www.ilo.org/wcmsp5/groups/public/ed_dialogue/sector/documents/normativeinstrument/wcms_325319.pdf)

International Labour Organization (2016). Psychosocial risks, stress and violence in the world of work. *International Journal of Labour Research* 8 (1-2).

International Labour Organization (2019a). New Safety and Health Issues Emerge as Work Changes. Retrieved on 12/8/2019 from [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_686571/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_686571/lang--en/index.htm)

International Labour Organization (2019b). Safety and Health at The Heart of The Future of Work. Building On 100 Years of Experience. Retrieved on

30/10/2019 from [https://www.ilo.org/safework/events/safeday/WCMS\\_686645/lang--en/index.htm](https://www.ilo.org/safework/events/safeday/WCMS_686645/lang--en/index.htm)

- Jahangiri, M., Eskandari, F., Karimi, N., Hasanipour, S., Shakerian, M., & Zare, A. (2019). Self-reported, work-related injuries and illnesses among restaurant workers in Shiraz City, South of Iran. *Annals of Global Health*, 85(1), 1–9. DOI: <https://doi.org/10.5334/Aogh.2440>
- Jekayinfa, S. O., Ojediran, J. O., Adebisi, K. E., O. L., F. A., & Adeniran, A. D. (2009). Appraisal of farm tractor accidents occurrence and prevention in Nigeria Adeniran. *Disaster Prevention and Management*, 18(4), 451-460.
- Jeong, B. Y. (2015). Cooking processes and occupational accidents in commercial restaurant kitchens. *Safety Science* 80, 87–93
- Jeon, M. S., Park, S. J., Jang, H. J., Choi, Y. S., & Hong, W. S. (2015). Evaluation of sanitation knowledge and practices of restaurant kitchen staff in South Korea. *British Food Journal*, 117(1), 62-77. doi:10.1108/BFJ-08-2013-0209
- Jilcha, K., & Kitaw, D. (2016). A literature review on global occupational safety and health practice & accidents severity. *International Journal for Quality Research* 10(2), 279–310 DOI – 10.18421/IJQR10.02-04
- Johnson, B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. In A. Tashakkori & C. Teddlle (eds), *Handbook of mixed methods in social and behavioural research* (pp.297-319). Thousand Oaks, CA: Sage.
- Joshua I. A., Abubakar I., Gobir, A. A., Nmadu, A. G., Igboanusi, C. C., Onoja-Alexander, M. O., Adiri, F., Bot, T. C., I-Joshua, W., & Shehu, A. U.

(2017). Knowledge of occupational hazards and use of preventive measures among bakery workers in Kaduna North Local Government Area, Kaduna State, Nigeria. *Archives of Medicine and Surgery* 2, 78-83.

Jovanovic, J. (2004). Prevention of occupational accidents. *Acta Medica Medianae* 43 (1), 49 – 55.

Juntarawijit, C., & Juntarawijit, Y. (2017). Cooking smoke and respiratory symptoms of restaurant workers in Thailand. *BMC Pulmonary Medicine* 17(41), 1-11. DOI 10.1186/S12890-017-0385-

Kamat, S. R., Nordin, E. A., Husain, K., & Ali, S. A. S. (2017). Investigation of musculoskeletal disorders among workers in food services (*Cafeteria*). *Human Factors and Ergonomics Journal* 2(3), 27 – 33

Kanten, S. (2013). The relationships among working conditions, safety climate, safe behaviors and occupational accidents: An empirical research on the marble workers. *The Macrotheme Review* 2(4), 173-182

Kavouras, S., Vardopoulos, I., Mitoula, R., Zorpas, A. A., & Kaldis, P. (2022). Occupational Health and Safety Scope Significance in Achieving Sustainability. *Sustainability* 14, (2424), 1-17

Kawulich, B. B. (2012). Collecting data through observation. Retrieved on 28/5/2020 from [https://www.researchgate.net/publication/257944783\\_Collecting\\_data\\_through\\_observation](https://www.researchgate.net/publication/257944783_Collecting_data_through_observation).

Katsuro, P., Gadzirayi, C. T., Taruwona, M., & Mupararano, S. (2010). Impact of occupational health and safety on worker productivity: A case of Zimbabwe food industry. *African Journal of Business Management* 4(13), 2644-2651.



- Kennedy, N. A. (2018). Assessment of psychosocial hazards among workers at the University of Port Harcourt. *Clinic Depress* 4, 135. Doi:10.4172/2572-0791.1000135
- Khan, W. A., Mustaq, T., & Tabassum, A. (2014). Occupational health, safety and risk analysis. *International Journal of Science, Environment and Technology* 3(4), 1336 – 1346
- Kilic, G., & Selvi, M. S. (2009). The effects of occupational health and safety risk factors on job satisfaction in hotel enterprises. *Ege Akademik Bakış / Ege Academic Review* 9 (3), 903-921.
- Kim, Y., Park, J., & Park, M. (2016). Creating a culture of prevention in occupational safety and health practice. *Safety And Health* 7, 89-96.
- Kirsh, B., Slack, T., & King, C. A. (2012). The nature and impact of stigma towards injured workers. *Journal of Occupational Rehabilitation* 22, 143–154. DOI 10.1007/S10926-011-9335-Z
- Kivlehan, K. (2005). *Occupational safety, health, and welfare at work in catering industry*. Unpublished Master's Thesis. Institute Of Technology Sligo, Ireland.
- Kivunja, C., & Kuyin, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education* 6(5), 26-41.
- Kocakulah, M. C., Kelley, A. G., Mitchell, K. M., & Ruggieri, M. P. (2016). Absenteeism problems and costs: Causes, effects and cures. *The International Business & Economics Research Journal*, 15, 89–96. <https://doi.org/10.19030/Iber.V15i3.9673>

- Kokane, S., & Tiwari, R. R. (2011). Occupational health problems of highway restaurant workers of Pune, India. *Toxicology and Industrial Health* 27(10), 945–948. DOI: 10.1177/0748233711399322
- Kuhn, V. S., Benetti, A. C., Dos Anjos, S. J. G., & Limberger, P. F. (2018). Food services and customer loyalty in the hospitality industry. *Tourism & Management Studies* 14(2), 26-35 DOI: 10.18089/Tms.2018.14203
- Kumar, R. (2011). *Research Methodology: A step-by-step guide for beginners*. (3<sup>rd</sup> ed). Los Angeles; London; New Delphi, Singapore; Washington DC: Sage
- Kumari, V., & Kapur, D. (2018). Understanding barriers to compliance to food safety standards in the catering establishments using a qualitative research method: Focus group discussion. *International Journal of Scientific Research in Science and Technology* 4(10), 423-440.
- Kyalo, A. M. (2016). *Level of utilization of personal protective equipment among workers in grain and oil seed milling industries in Nairobi City County, Kenya*. Unpublished Master's Thesis. Kenyatta University. Kenya.
- Labor Occupational Safety and Health Program (2010). Protecting the safety and health of restaurant workers. University of California, Los Angeles. <https://www.yumpu.com/en/document/view/28585456/protecting-the-safety-and-health-of-restaurant-workers-ucla-losh>
- Larkin, J. (2003). *Strategic Reputation Risk Management*. New York, NY: Palgrave Macmillan.
- Lebeau, M., & Duguay, P. (2013). The costs of occupational injuries: A review of the literature. *studies and research projects (R-787)*.

Lee, J. W., Lee, J. J., Mun, H. J., Lee, K-J & Kim, J. J., (2013). The relationship between musculoskeletal symptoms and work-related risk factors in hotel workers. *annals of occupational and environmental medicine* 25:20 Doi: [Http://Dx.Doi.Org/10.4314/Jfas.V10i1s.44](http://dx.doi.org/10.4314/Jfas.V10i1s.44)

Leigh, J., Markowitz, S., Fahs. M., & Landrigan, P. (2000). *Costs of occupational injuries and illnesses*. United States Ann Arbor: University of Michigan.

Leka, S., Griffiths, A., & Cox, T. (2003). *Work organisation and stress*. Retrieved on 23/07/2023 from <https://apps.who.int/iris/bitstream/handle/10665/42625/9241590475.pdf>

Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences revisited. In N. K. Denzin & Y. S. Lincoln, *The SAGE handbook of qualitative research* (4th ed), 97-128. Thousand Oaks, CA: Sage

Lind, S., Nenonen, S., & Rahnasto, J. K. (2008). Safety risk assessment in industrial maintenance. *Quality in Maintenance Engineering* 14 (2), 194-204.

Loke, Y. Y., Tan, W. J., Manickam, K., Heng, P., Tjong, C., Kheng, L. G., Lim, S. Y. E., Gan S. L., & Takala, J. (2013). Economic cost of work-related injuries and ill-health in Singapore. Retrieved on 19/7/2020 from [https://www.researchgate.net/publication/259220728\\_Economic\\_Cost\\_of\\_Work-related\\_Injuries\\_and\\_Ill-health\\_in\\_Singapore](https://www.researchgate.net/publication/259220728_Economic_Cost_of_Work-related_Injuries_and_Ill-health_in_Singapore)

Lovelock, K. (2019). Psychosocial hazards in work environments and effective approaches for managing them. Retrieved on 2/12/2019 from <https://www.worksafe.govt.nz/dmsdocument/5417-psychosocial->

hazards-in-work-environments-and-effective-approaches-for-managing-them

Mahmoud, M. H., & Elsayd, S. M. (2013). Designing and implementing a first aid program for employees of female health colleges at Najran University. *International Journal of Advanced Research* 1(9), 269-285.

Malik, K. R., & Rather, A. R. (2017). A study on occupational health hazards among cooks of hotels. *International Journal of Physical Education, Sports and Health*; 4(1), 27-28

Maseko, M. M. (2016). *Effects of non-compliance with the occupational health and safety act (no. 85 of 1993) among the food and beverage industries in selected provinces of South Africa*. (Doctorial thesis, University of South Africa, South Africa). Retrieved on 22/09/2019 from <https://uir.unisa.ac.za/handle/10500/21042>

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396. <https://doi.org/10.1037/h0054346>

Matsuzuki, H., Haruyama, Y., Muto, T., Aikawa, K., Akiyoshi Ito, A., & Katamoto, S. (2013). workers' load and job-related stress after a reform and work system change in a hospital kitchen in Japan. *Environmental Health and Preventive Medicine* 18, 171–176. DOI 10.1007/S12199-012-0291-9

Miranda, K-L., Young, T. L., & Cain, L. N. (2018). A comparative exploration of foodservice workers' illicit drug use. *Perspectives in Asian Leisure and Tourism* 3(3), 1-39

Molamohamad, Z., & Ismail, N. (2014). The relationship between occupational safety, health, and environment, and sustainable development: A review



and critique. *International Journal of Innovation, Management and Technology* 5(3).

Mondal, J. (2012). A review on mechanical & physical hazards at domestic kitchen. *International Journal of Occupational Safety and Health*, 2(1), 7 – 10

Moyo, D., Zungu, M., Kgalamono, S., & Mwila, C. D. (2015). Review of occupational health and safety organization in expanding economies: The case of Southern Africa. *Annals of Global Health*. 81(4) 495-502.

Namkung, Y., & Jang, S. (S) (2007). does food quality really matter in restaurants? its impact on customer satisfaction and behavioral intentions. *Journal of Hospitality & Tourism Research* 31(3), 387-410.  
DOI: 10.1177/1096348007299924

Niedhammer, I., Lesuffleur, L., Labarthe, G., & Chastang, J-F. (2018). Role of working conditions in the explanation of occupational inequalities in work injury: Findings from the National French SUMER Survey. *BMC Public Health* 18(344), 1-13 <https://doi.org/10.1186/S12889-018-5254-7>

Ofoegbu O. E., Olawepo G. T., & Ibojo B. O. (2013). Effects of occupational hazards on employees' productivity. *European Journal of Business and Management* 5(3), 10-21

Olsen, C., & St George, D. M. (2004). Cross-Sectional study design and data analysis. Retrieved on 20/03/2020 from [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje\)\)/reference/ReferencesPapers.aspx?ReferenceID=1893505](https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1893505)

- Oluoch, I. (2017). *Assessment of the occupational safety and health management practices in water service industry in Kisumu country Kenya*. (Master's thesis). Jomo Kenya University of Agriculture and Technology. Kenya. Retrieved on 16/06/2020 from <http://ir.jkuat.ac.ke/handle/123456789/3488?show=full>
- Omoijiade, E. N. (2018). An assessment of laundry workers exposure to workplace hazards in secondary and tertiary health facilities in Benin-City, Nigeria. *MOJ Public Health* 7(5), 252–259. DOI: 10.15406/Mojph.2018.07.00239
- Oppong, S. (2011). *Health & Safety: Theory and Practice in The Oil and Gas Sector*. Saarbrücken, Germany: VDM Publishing House Ltd.
- Oranye, N. O., Wallis, B., Roer, K., Archer-Heese, G., & Aguilar, Z. (2016). Do personal factors or types of physical tasks predict workplace injury? *Workplace Health & Safety* 64(4). DOI: 10.1177/2165079916630552
- Osang, J. E., Udoimuk, A. B., Etta, E. B., Ushie, P. O., & Offiong N. E. (2013). Methods of gathering data for research purpose and applications using IJSEER acceptance rate of monthly paper publication (March 2012 Edition-May 2013 Edition). *Journal of Computer Engineering*, 15(2), 59-65.
- Othman, I., Majid, R., Mohamad, H., Shafiq, N., & Napia, M. (2018). Variety of accident causes in construction industry. Retrieved on 04/05/2019 from <https://doi.org/10.1051/Mateconf/201820302006>

- Paes, I. C. E., Guilherme, R. C., Livera, A. V. S., Valle, R. G. R., & Silveira, K. C. (2020). Occupational risks of commercial restaurant workers in the metropolitan region of Recife-PE. *Gestão & Produção*, 27(3), e4330. <https://doi.org/10.1590/0104-530X4330-20>
- Pallant, J. (2016). SPSS survival manual: A step by step guide to data analysis using IBM SPSS program. (6<sup>th</sup> ed), Open University Press, Berkshire.
- Pan, C-H., Chan, C-C., & Wu, K-Y. (2008). Effects on Chinese restaurant workers of exposure to cooking oil fumes: A cautionary note on Urinary 8-Hydroxy-2-Deoxyguanosine. *Cancer Epidemiology, Biomarkers & Prevention* 17(12), 3351-3687
- Park, J., Kim, Y., & Han, B. (2018). Work sectors with High risk for work-related musculoskeletal disorder in Korean men and women. *Safety and Health at Work*. 9. 75-78
- Pekkarinen, A., Anttonen, H., & Niskanen, J. (1996). Assessment of health risks in canteen kitchens. *International Journal of Occupational Safety and Ergonomics*, 2(3). 262-267. DOI: 10.1080/10803548.1996.11076354
- Peters, C., & Kontor-Kwateng, J. (2016). Lowe Accra and the pitch for KFC Ghana. Case studies in strategic. *Communication* 5, 236-248
- Phil, H., & Ferret, E. (2008). Introduction to Health and Safety in Construction (3<sup>rd</sup> Ed.). Oxford: Elsevier Publishing.
- Pizam, A. (2010). Alcoholism among hospitality employees. *International Journal of Hospitality Management* 29(4), 547–548.
- Pravamayee, S. (2014). Strategy to develop an effective workplace environment. *International Journal of Language & Linguistics* 1(1), 57-61

- Qiang, C., & Chow, W. K. (2007). A discussion of occupational health and safety management for the catering industry in China. *International Journal of Occupational Safety and Ergonomics*, 13(3). 333-339, DOI: 10.1080/10803548.2007.11076732
- Quick, J. D., Horn, R. S., & Quick, J. C. (1986). Health consequences of stress. *Journal of Organizational Behavior Management* 8, 19–36.
- Rahi, S. (2017). Research Design and Methods: A systematic review of research paradigms, sampling issues, and instruments development *International Journal of Economics & Management Sciences*, 6(2), 1-5. DOI: 10.4172/2162-6359.1000403
- Rajini, P. A. D., Fernando, C. S. P., & Serapperum, S. A. I. S. (2012). Preventive methods used for health and safety hazards in hotel industry in Sri Lanka. Retrieved on 21/02/2019 from <http://dl.lib.uom.lk/bitstream/handle/123/17002/PREVENTIVE%20METHODS%20USED%20FOR%20HEALTH%20AND%20SAFETY%20HAZARDS%20IN.pdf?sequence=1>
- Ramesh, S., & Manimegalai, B. (2018). Effective safety management practices of an outsourced catering group in a hospital kitchen of a tertiary care hospital. *International Journal of Advance Research and Development* 3 (2), 145-148.
- Razon, A. R., & Ahmad, I. (2017). A Study on Fire Safety and Security At Kitchen In Apartment Buildings. *International Journal of Latest Engineering and Management Research* 2(3), 62-71



Reid, A., Lenguerrand, E., Santos, I., Read, U., Lamontagne, A.D., Fritchi, L. & Harding, S. (2014). Taking risks and survival jobs: Foreign-born workers and work-related injuries in Australia. *Safety Science* 70, 378-386.

Republic of Ghana (1970). Factories, Offices and Shops Act, 1970, Act 328.

Retrieved on 11/8/2019 from [https://www.bcp.gov.gh/acc/registry/docs/FACTORIES,%20OFFICES%20AND%20SHOPS%20ACT,%201970%20\(ACT%20328\).pdf](https://www.bcp.gov.gh/acc/registry/docs/FACTORIES,%20OFFICES%20AND%20SHOPS%20ACT,%201970%20(ACT%20328).pdf)

Republic of Ghana (1992). Constitution of the Republic of Ghana. Accessed on 11/8/2019 from [www.Ghana.Gov.Gh/Images/Documents/\\_Ghana.Pdf](http://www.Ghana.Gov.Gh/Images/Documents/_Ghana.Pdf)

Republic of Ghana (2003). Labour Act, Act 651. Retrieved on 11/8/2019.

[Www.Ilo.Org/Legacy/English/Inwork/Cb-Policy.../Ghanalabouract2003section109.Pdf](http://www.Ilo.Org/Legacy/English/Inwork/Cb-Policy.../Ghanalabouract2003section109.Pdf).

Rim, K-T., & Lim, C-H. (2014). Biologically hazardous agents at work and efforts to protect workers' health: A review of recent reports. *Safety and Health at Work* 5, 43-52

Sabet, P. G. P., Aadal, H., Jamshidi, M. H. M., & Rad, K. G. (2013). Application of domino theory to justify and prevent accident occurrence in construction sites. *Journal of Mechanical and Civil Engineering* 6(2), 72-76.

Safe Act Australia (2011). National hazard exposure worker surveillance – Exposure to biological hazards and the provision of controls against biological hazards in Australian workplaces. Retrieved on 17/03/2020 from <https://www.safeworkaustralia.gov.au/resources-and-publications/>

reports/national-hazard-exposure-worker-surveillance-exposure-biological-hazards-and-provision-controls-against-biological-hazards-australian-workplaces

Saldaña, M. A. M., Herrero, S. G., Campo, M. A. M. D., & Ritzel, D. O. (2003).

Assessing definitions and concepts within the safety profession. *The International Electronic Journal of Health Education* 6, 1-9.

Sam-Mensah, R. (2018). *Occupational health and safety management and nurses' productivity (Health Ace Delivery): Evidence from public hospitals in Ghana*. (Master's thesis, University Ghana. Ghana).

Retrieved on 30/05/2021 from <https://ugspace.ug.edu.gh/handle/123456789/31232>

Sant, S., Kamthe, R., Shaikh, S., & Gaikwad, R. (2016). Prevalence of musculoskeletal pain in cooking professionals of rural versus urban restaurants. *International Journal of Health Sciences and Research* 6(11),167-171.

Sarantakos, S. (2013). *Social research* (4<sup>th</sup> ed.). Hong Kong: Palgrave Macmillan:

Saunders, M., Lewis P., & Thornhill, A. (2019). *Research methods for business students*, (7<sup>th</sup> ed). Italy: Legatoria Editoriale Giovanni Olivotto L.E.G.O S.p. A:

Schweder, P., Quinlan, M., Bohle, P., Lamm, F., & Huat Bin, A. A. (2015). Injury rates and psychological wellbeing in temporary work: A study of seasonal workers in the New Zealand food processing industry. *New Zealand Journal of Employment Relations* 40(2), 24-46

Sekheta, M. A., Sahtout, A. H., Sekheta, N. F., Kapkovic, M., & Pantovic, N. (2018). The HACCP implementation and the mental illness of food handlers as the 4<sup>th</sup> eventual hazard. *Internet Journal of Food Safety* 6, 5-10

Senya, E. K. (2017) Assessing the awareness of safety rules in the hospitality industry in Ghana: A case of some selected hotels in the Accra Metropolitan area. *Journal of Tourism, Hospitality and Sports* 7, 21-30.

Shakya, N. R., & Shrestha, S. (2018). Prevalence of work-related musculoskeletal disorders among canteen staff of Kathmandu University. *Journal Oof Kathmandu Medical College*, 7(4), 162-167.

Siaw, G. A., Khayiy, R., Mugambi, R., & Sia, N. A. (2018). Health hazards and the associated contributions to work safety in the housekeeping department of budget hotels. *International Journal of Advanced Engineering and Management Research* 3(2). 130-137.

Siaw, G. A. (2018). *Health hazards and working conditions on the safety of housekeeping staff in budget hotels in Eastern Region of Ghana*. Unpublished Doctoral thesis. Kenyatta University, Kenya

Sinha, T. (2019). Risk assessment and management. Retrieved on 23/07/2023 from [https://www.researchgate.net/publication/341034867\\_Risk\\_Assessment\\_and\\_Management](https://www.researchgate.net/publication/341034867_Risk_Assessment_and_Management)

Sing, K. H. (2012). *Barriers to safety, health, and wellness in organization: Understanding leadership and employee perceptions*. Unpublished Doctoral thesis. National University of Singapore. Singapore.

- Srivastava, M. (2017). Potential Health Hazards of Workers in hospitality industry. *International Journal of Applied Home Science* 4 (7 & 8), 617-622.
- Stuart, H. (2016). Stigma and Work. *Healthcare Papers* 5(2), 100-111. DOI: 10.12927/Hcpap.16829.
- Stukus, P. D. (2017). *Systems-Theoretic Accident Model and Processes (STAMP) Applied to a U.S. Coast Guard Buoy Tender Integrated Control System*. Unpublished Master's degree. Massachusetts Institute of Technology. United States
- Subramaniam, S., & Murugesan, S. (2015). Investigation of work-related musculoskeletal disorders among male kitchen workers in South India. *International Journal of Occupational Safety and Ergonomics*, 21(4), 524-531, DOI: 10.1080/10803548.2015.1096063
- Subramaniam, C., Shamsudin, F. M., & Alshuaibi, A. S. I. (2017). Investigating employee perception of workplace safety and safety compliance using PLS-SEM among technical employees in Malaysia. *Journal of Applied Structural Equation Modeling* 1(1), 44-61
- Syed Ali, S. A., Kamat, S. R., & Husin, K. (2018). A case study: risk work practices with slips and falls potential among food production workers in same industry. *Human Factors and Ergonomics Journal*, 3 (2), 44 – 50.
- Taderera, H. (2012). Occupational health and safety management systems: Institutional and regulatory frameworks in Zimbabwe. *International Journal of Human Resource Studies* 2(4), 99-117.



- Tadesse, T., & Admassu, M. (2006). Occupational safety and health. Retrieved on 15/02/2019 from [https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture\\_notes/env\\_occupational\\_health\\_students/ln\\_occ\\_health\\_safety\\_final.pdf](https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/env_occupational_health_students/ln_occ_health_safety_final.pdf)
- Tak, S. (2016). *An assessment of occupational health and safety risks in the hospitality industry: The case of Sarova Stanley Hotel, Nairobi, Kenya*. (Master's Thesis, University of Nairobi, Nairobi, Kenya). Retrieved on 23/03/2019 from <http://erepository.uonbi.ac.ke/handle/11295/97753>
- Takala, J., Hämäläinen, P., Saarela, K., Yun, L., Manickam, K., Jin, T., Heng, P., Tjong, C., Kheng, L., Lim, S., & Lin, G. (2014). "Global estimates of the burden of injury and illness at work in 2012". *Journal of Occupational and Environmental Hygiene*, 11(5):326-337.
- Tan, D. & Balaraman, T. (2020). Working posture and musculoskeletal pain among restaurant chef. *Indian Journal of Physiotherapy and Occupational Therapy*, 14(2), 224-259.
- Tepper, B. J., Duffy, M. K., & Shaw, J. D. (2001). Personality moderators of the relationships between abusive supervision and subordinates resistance. *Journal of Applied Psychology* 86(5), 974-983.
- Thackrah, C. T. (1831). The effects of the principal arts, trades and professions, and of civic states and habits of living, on health and longevity, with suggestions for the removal of many of the agents which produce disease and threaten the duration of life. (2<sup>nd</sup> ed). London: Longman.
- Thanh, N. C., & Thanh, T. T. L. (2015). The interconnection between interpretivist paradigm and qualitative methods in education. *American Journal of Educational Science* 1(2), 24-27.

- Tiwari R. R. (2015). Situational analysis of occupational health issues of restaurant and dhaba workers. *Occupational Medicine & Health Affairs* 3(6), 1-4. Doi:10.4172/2329-6879.1000224
- Tomita, S., Muto, T., Matsuzuki, H., Haruyama, Y., Ito, A., Muto, S., Haratani, T., Seo, A., Ayabe, M., & Katamoto, S. (2013). Risk factors for frequent work-related burn and cut injuries and low back pain among commercial kitchen workers in Japan. *Industrial Health*, 51, 297–306
- Tsai, J. H-C. & Salazar, M. K. (2007). Occupational hazards and risks faced by Chinese immigrant restaurant workers. *Fam Community Health*. 30(2S), S71–S79.
- Tompa, E., Mofidi, A., Heuvel, S. V. D., Bree, T. V., Michaelsen, F., Jung, Y., Lukas Porsch, L., & Emmerik, M. V. (2021). Economic burden of work injuries and diseases: A framework and application in five European Union countries. *BMC Public Health*, 21(49), 1-10.
- Tsai J. H-C. (2009). Chinese immigrant restaurant workers' injury and illness experiences. *Archives Of Environmental & Occupational health*, 64(2), 107-114, DOI: 10.3200/AEOH.64.2.107-114
- Tziaferi, S. G., Sourtzi, S. G., Kalokairinou, A., Sgourou, E., Koumoulas, E., & Velonakis, E. (2011). Risk Assessment of physical hazards in greek hospitals combining staff's perception, experts' evaluation and objective measurements. *Safe Health Work* 2, 260-272 [Http://Dx.Doi.Org/10.5491/SHAW.2011.2.3.260](http://Dx.Doi.Org/10.5491/SHAW.2011.2.3.260)
- United Nations (2015). Sustainable Development Goals. Retrieved on 7/8/2023 from <https://sdgs.un.org/goals>

- Varacallo, M., & Knoblauch, D. K. (2019). Occupational injuries and workers' compensation management strategies. Retrieved on 25/06/2020 from [www.Researchgate.Net](http://www.Researchgate.Net) › Publication › 331110476\_Occup
- Vidua, R., Chouksey, V. K., Bhargava, D. C., & Kumar, J. (2020). Problems arising from PPE when worn for long periods. *Medico-Legal Journal* 0(0), 47-49.
- Vives, A., Gray, N., González, F., & Molina, A. (2018). Gender and ageing at work in Chile: Employment, working conditions, work-life balance and health of men and women in an ageing workforce. *Annals of Work Exposures and Health*, 2018, Vol. 62, No. 4, 475–489. doi: 10.1093/annweh/wxy021
- Ward, J. A., Decastro, A. B., Tsai, J. H. C., Linker, D., Hildahl, L., & Miller, M. E. (2010). An injury prevention strategy for teen restaurant workers. *American Association of Occupational Health Nurses Journal* 58(2), 57-67.
- Wang, Y., & Griffis, F. (2018). The theory of zero incident safety management. *Journal of Civil, Construction and Environmental Engineering*, 3(3), 83-98. Doi: 10.11648/J.Jccee.20180303.15
- Warsi, S. (2014). *Injured workers and stigma: an interdisciplinary analysis*. Unpublished Master's Thesis. Athabasca University. Canada.
- Wilson, A. (2011). TUC survey shows rise in psychosocial hazards at work. Retrieved on 2/12/2019 from <https://www.eurofound.europa.eu/observatories/eurwork/articles/tuc-survey-shows-rise-in-psychosocial-hazards-at-work>

Workmen's Compensation Law 1987 (PNDC 187). Retrieved on 8/02/2019 from [http://www.ilo.org/dyn/natlex/natlex4.detail?p\\_lang=en&p\\_isn=3823&p\\_country=GHA&p\\_count=115](http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=3823&p_country=GHA&p_count=115)

World Health Organization (2002). Occupational health: *A manual for primary health care workers*. Retrieved on 8/08/2019 from <https://www.who.int/publications-detail-redirect/occupational-health---a-manual-for-primary-health-care-workers>

World Health Organization/International Labour Organisation, (2021). WHO/ILO Joint Estimates of the Work-related Burden of Disease and Injury, 2000-2016: Global Monitoring Report. Retrieved on 29/11/2022 from <https://www.who.int/publications-detail-redirect/9789240034945>

World Health Organization (2022). Occupational Health. Retrieved on 29/08/2022 from <https://www.who.int/health-topics/occupational-health>

Yazdani, A., & Wells, R. (2018). Barriers for implementation of successful change to prevent Musculoskeletal Disorders and how to systematically address them. *Applied Ergonomics* 73(122–140). <https://doi.org/10.1016/j.apergo.2018.05.004>

Yuebing, Z., Kai, W., & Ruming, Z. (2011). Theoretical research on hazards and accident prevention. *Procedia Engineering* 26, 16-24. [Doi:10.1016/j.proeng.2011.11.2135](https://doi.org/10.1016/j.proeng.2011.11.2135)

Zakaria, N. H., Mansor, N., & Abdullah, Z. (2012). Workplace accident in Malaysia: Most Common Causes and Solutions. *Business and Management Review* 2(5), 75-88.



**APPENDICES****APPENDIX A: INTERVIEW SCHEDULE FOR SURVEY****UNIVERSITY OF CAPE COAST****FACULTY OF SOCIAL SCIENCES****DEPARTMENT OF HOSPITALITY AND TOURISM MANAGEMENT**

Dear Sir/Madam,

This research is being undertaken by a candidate in fulfilment of the requirements for the award of a Doctorate Degree in Hospitality Management in the Department of Hospitality and Tourism Management, University of Cape Coast, Ghana. You are assured that, the findings from this study would be used strictly for academic purposes. You are assured of your anonymity and confidentiality. Your decision to participate in this study is voluntary and you are permitted to withdraw from the interaction at any point in time if you so desire. However, since your responses are very important to the success of this study, you are humbly requested to participate for the smooth completion of the research. It is anticipated that the study will take about 40-45 minutes to complete.

Thank you,

Susana Ohenewa Moreaux (PhD Candidate)

Do you agree participate in this study?    Yes     No

Date .....

Type and grade of restaurant kitchen .....

**SECTION A: HAZARDS EXISTING IN THE RESTAURANT KITCHEN**

I. Instructions: Please read each question carefully and tick (✓) the correct answer.

If yes, indicate the number of times it occurs in a year.

Hazard	Yes	No	No. of times
<b>Physical Hazards</b>			
1. Do you use noisy metal tools or appliances?			
2. Are you exposed to naked fire?			
3. Are combustible (burnable) materials placed closed to fire?			
4. Do you wear loose-fitting sleeves of dresses near hot burners?			
5. Do you get in contact with hot pots or cook wares?			
6. Do you use sharp cutting tools or appliances?			
7. Do you use faulty cooking tools and appliances?			
8. Do you overload sockets with appliances?			
9. Do you experience hotness/heat in the kitchen environment?			
10. Do you experience coldness from cold foods or cold storage facilities?			
11. Do glass wares break when you are handling them?			
<b>Chemical Hazards</b>			

12. Do smoke emanate from fuel in the kitchen			
13. Do fumes (smoke) emanant from burnt hot oil, sugar or foods when cooking?			
14. Do gas leak in the kitchen?			
15. Is the kitchen environment dusty?			
16. Is there soot emanating from cooking? (blacken dust on cooking pots)			
17. Do you use harsh bleaches for cleaning?			
<b>Ergonomic Hazards</b>			
18. Do you lift heavy objects and equipment?			
19. Do you work repetitively in awkward postures?			
20. Do you use improperly designed work tools?			
21. Do you follow improper work procedures?			
22. Do you overstretch yourself to reach utensils, ingredients or items from a height?			
23. Do you stand for long hours in the discharge of your work?			
24. Do you work without sitting throughout the discharge of duty?			
25. Is the kitchen layout done improperly?			
26. Is the kitchen space inadequate?			
<b>Psychosocial Hazards</b>			
27. Are you bullied at work?			

28. Are you shouted/yelled at in the course of duty?			
29. Do you receive insults at work?			
30. Are you physically assaulted at work?			
31. Do you experience harassment?			
32. Do you over work in the kitchen?			
33. Do you work under pressure to meet deadlines?			
34. Do you work without a break/rest?			
35. Do you work overtime?			
36. Do you run shift in the kitchen?			
<b>Biological Hazards</b>			
37. Are mice present in the kitchen?			
38. Are there cats in the kitchen?			
39. Are insects present in the kitchen?			
40. Do you come into contact with blood of animals with bare hands with uncovered cuts or bruises?			
41. Do you handle food infested with moulds/fungi with bare hands with uncovered cuts or bruises?			
42. Do you handle meat or eggs or fresh milk with bare hands with uncovered cuts or bruises??			



**SECTION B: EFFECTS OF HAZARDS ON EMPLOYEE'S HEALTH AND SAFETY IN THE KITCHEN**

II. Have you encountered any health condition (including injuries) as a result of the hazards you faced while working in this facility? 1. Yes  2. No

**NB:** If No, move to question VI

III. If yes please tick (✓) the type of health condition you have suffered and the number of times it occurred in a year.

Statement	Yes	No	No. of times
<i>Physical effects of hazards in the kitchen</i>			
1. Burn			
2. Cuts/Laceration			
3. Scalds (Burn with hot liquid)			
4. Bruises			
5. Bone pain (Fracture)			
6. Muscle pain (muscle cramp)			
7. Back pain			
8. Tendon and ligament pain (Sprain)			
9. Tunnel syndrome (pain in the nerves/nerve compression)			
10. Arthritis (joint pain/inflammation/stiffness)			
11. Adhesive capsulitis (Stiffness/frozen shoulder)			
12. Headache			

13. Cold			
14. Cough			
15. Migraine			
16. Rashes			
17. Anaemia			
18. Pneumonia			
19. Other condition (specify)			
<b><i>Psychological effects of hazards in the kitchen</i></b>			
20. Depression			
21. Sleep deprivation/insomnia			
22. Burn out (tiredness)			
23. Stress			
24. Anxiety			
25. Sexual dysfunction (desire/arousal/orgasm/ pain disorder)			
26. Other condition (specify)			

IV. Which part of your body was injured with regards to following injuries?

- 1. Burn                            1.....    2.....    3 .....    4.....
- 2. Laceration/Cut            1.....    2.....    3 .....    4.....
- 3. Scalds                            1.....    2.....    3 .....    4.....
- 4. Bruises                            1.....    2.....    3 .....    4.....
- 5. Fracture                            1.....    2.....    3 .....    4.....
- 6. Arthritis (joint pain).    1.....    2.....    3.....    4.....
- 7. Back pain (lower or upper part)    1.....    2.....

V. Please indicate the degree of severity of your encounter with the following conditions where

IN= Insignificant (no treatment required), MI= Minor (injury required first aid),

MO= Moderate (injury required medical treatment and required 1-3 days absent

from work), MA= Major (Required specialist, or hospitalization) CR= Critical

(Multiple serious injuries, permanent disability). **NB:** Please tick according to the

conditions indicated in question III.

Condition	IN	MI	MO	MA	CR
1. Burn					
2. Laceration/Cuts					
3. Scalds					
4. Bruises					
5. Bone pain/Fracture					
6. Muscle pain					
7. Back pain					
8. Tendon and ligament pain					
9. Tunnel syndrome					
10. Arthritis					
11. Adhesive capsulitis					
12. Headache					
13. Cold					
14. Cough					
15. Migraine					

16. Rashes					
17. Anaemia					
18. Pneumonia					

VI. Do you engage in any of the following acts as a way of coping with the hazards you faced in this facility?

If yes, state the number of times it is carried out in a year

<i>Behavioural effects of hazards in the kitchen</i>			
Acts	Yes	No	No. of times
1. Excessive drinking of alcohol			
2. Excessive drinking of caffeine			
3. Smoking of cigarette/tobacco			
4. Smoking cannabis/marijuana/wee			
5. Over eating			
6. Under eating			
7. Use prescribed drugs without doctor's advice			
8. Other condition (specify)			

VII. Please indicate if you have been diagnosed of any of these chronic illnesses/diseases relating to work since you were employed in the kitchen.

[Tick (✓) all that apply]

- |             |                          |                    |                          |
|-------------|--------------------------|--------------------|--------------------------|
| 1. Obesity  | <input type="checkbox"/> | 6. Hypertension    | <input type="checkbox"/> |
| 2. Diabetes | <input type="checkbox"/> | 7. Renal disorders | <input type="checkbox"/> |



3. Asthma                       8. Coronary heart disease
4. Cancer                       9. Stomach ulcer.
5. Eye problem                       10. Others (please specify) .....

**SECTION C: EMPLOYEES ROLE OF ENSURING SAFETY AND HEALTH MEASURES IN RESTAURANT KITCHEN**

VIII. Please read each question carefully and tick (√) the correct answer. If yes, indicate the number of times it is carried out within a year.

Statement	Yes	No	No. of times
1. Did you attend any induction training on safety and health rules?			
2. Do you attend training on electrical safety?			
3. Do you attend training on drills for fire evacuation?			
4. Do you attend training on how to administer first aid?			
5. Do you attend training on safe use of personal protective equipment?			
6. Do you use apron in the kitchen?			
7. Do you use head covers in the kitchen?			
8. Do you use gloves in the kitchen?			
9. Do you wear non-slippery footwears in the kitchen?			
10. Do you use face masks/nose mask in the kitchen?			
11. Do you use ear muffs when using noisy appliances?			

12. Do you use appropriate personal protective equipment?			
13. Do you report any hazard, unsafe act or conditions that exist in the kitchen?			
14. Do you report any form of accident or injury that occurs in the kitchen?			
15. Do you follow safety procedures when discharging duties?			
16. Do you comply with instruction on health and safety matters?			

**SECTION D: BARRIERS TO EMPLOYEES COMPLIANCE OF HEALTH AND SAFETY MEASURES IN THE KITCHEN**

IX. Please indicate your level of agreement or disagreement with the following statements SD= Strongly Disagree, D= Disagree, N= Neither Agree or Disagree, A= Agree, and SA= Strongly Agree

Barriers	SD	D	N	A	SA
I don't comply because					
<b>Behavioural issues</b>					
1. I feel uncomfortable wearing aprons					
2. I feel uncomfortable wearing non slippery shoes					
3. I feel uncomfortable covering my hair					
4. I feel uncomfortable wearing gloves					

5. I have been working for many years and my experiences protect me not the health and safety measures					
6. I am attached to my old ways of working without using PPE					
7. The use of protective clothing slows down my work performance					
8. I forget to comply with the safety instructions and procedure					
9. I forget to use the protective equipment					
<b>Ignorance</b>					
10. I am not aware of the safety and health measures					
11. I believe the health and safety measures cannot prevent the occurrence of injuries or illnesses					
<b>Lack of Resources</b>					
12. I have no time to attend safety training					
13. I have no money to buy PPE					
<b>Belief</b>					
14. I believe workplace injuries/illnesses are punishment from God/gods and not about the non-compliance of the safety measures.					
15. My religion does not allow me to report an unsafe act of others					

**SECTION E: SOCIO-DEMOGRAPHIC CHARACTERISTICS**

<b>Influence of social norms</b>					
16. Other staff do not comply with the measures too and nothing happens to them					
17. Other staff ridicule me when I complied with the health and safety measures					
<b>Health issues</b>					
18. I get rashes on my skin when I used the gloves					
19. I have breathing difficulty when I wear the complete protective clothing					
<b>Supervision/enforcement</b>					
20. There is inadequate enforcement of the safety and health measures					
21. There is inadequate supervision to the safety and health measures					
<b>Lack of management commitment</b>					
22. Management does not provide PPE					
23. There is inadequate supply of PPE					
24. Management does not regularly provide PPE					
25. Management provides irregular size PPE that are uncomfortable to use					
26. Management does not organize training on general control of hazards					
27. Management does not organize training on basic electrical safety					

X. Gender



28. Management does not organize training on drills for fire evacuation					
29. Management does not organize training on use of personal protective equipment					
30. Management does not organize training on basic first aid administering					
31. My manager does not allow me to attend the health and safety training					
32. Management does not take any action when I report any hazard or unsafe acts in the kitchen					
33. Management tags staff as difficult if they report hazards or unsafe act/ conditions in the kitchen					
<b>Work pressure</b>					
34. I do miss my training session due to work pressure					
35. Work pressure prevents me from complying with instruction on safety matters					
36. Work pressure prevents me from complying with safety and health procedures					

1. Male

2. Female

XI. Age.....

XII. Marital Status

1. Single  3. Divorced  5. Widowed

2. Married  4. Separated  6. Others (please specify) .....

XIII. Highest level of Education Attained

- |                        |                          |                         |                          |
|------------------------|--------------------------|-------------------------|--------------------------|
| 1. No Formal Education | <input type="checkbox"/> | 5. Vocational/Technical | <input type="checkbox"/> |
| 2. Primary             | <input type="checkbox"/> | 6. Diploma              | <input type="checkbox"/> |
| 3. Middle/JHS          | <input type="checkbox"/> | 7. First Degree         | <input type="checkbox"/> |
| 4. O’/A’ Level/SHS     | <input type="checkbox"/> | 8. Post Graduate        | <input type="checkbox"/> |

XIV. Religion

- |                 |                          |                                  |                          |
|-----------------|--------------------------|----------------------------------|--------------------------|
| 1. Christianity | <input type="checkbox"/> | 3. Traditional                   | <input type="checkbox"/> |
| 2. Islam        | <input type="checkbox"/> | 4. Others (please specify) ..... |                          |

XV. Nationality .....

XVI. Ethnicity .....

**Background Work-related characteristics**

XVII. Type of restaurant kitchen

- |                           |                          |                     |                          |
|---------------------------|--------------------------|---------------------|--------------------------|
| 1. Independent Restaurant | <input type="checkbox"/> | 2. Hotel Restaurant | <input type="checkbox"/> |
|---------------------------|--------------------------|---------------------|--------------------------|

XVIII. Grade of Hotel (If applicable)

- |               |                          |             |                          |
|---------------|--------------------------|-------------|--------------------------|
| 1. Five Star  | <input type="checkbox"/> | 4. Two Star | <input type="checkbox"/> |
| 2. Four Star  | <input type="checkbox"/> | 5. One star | <input type="checkbox"/> |
| 3. Three Star | <input type="checkbox"/> |             |                          |

XIX. Grade of Restaurant (If applicable)

- |              |                          |              |                          |                |                          |
|--------------|--------------------------|--------------|--------------------------|----------------|--------------------------|
| 1. Grade One | <input type="checkbox"/> | 2. Grade Two | <input type="checkbox"/> | 3. Grade Three | <input type="checkbox"/> |
|--------------|--------------------------|--------------|--------------------------|----------------|--------------------------|

XX. Type of ownership of operation

- |                      |                          |                                  |                          |
|----------------------|--------------------------|----------------------------------|--------------------------|
| 1. Sole proprietor   | <input type="checkbox"/> | 3. Franchise                     | <input type="checkbox"/> |
| 2. Joint partnership | <input type="checkbox"/> | 4. Others (please specify) ..... |                          |

XXI. Year hotel/restaurant was established .....

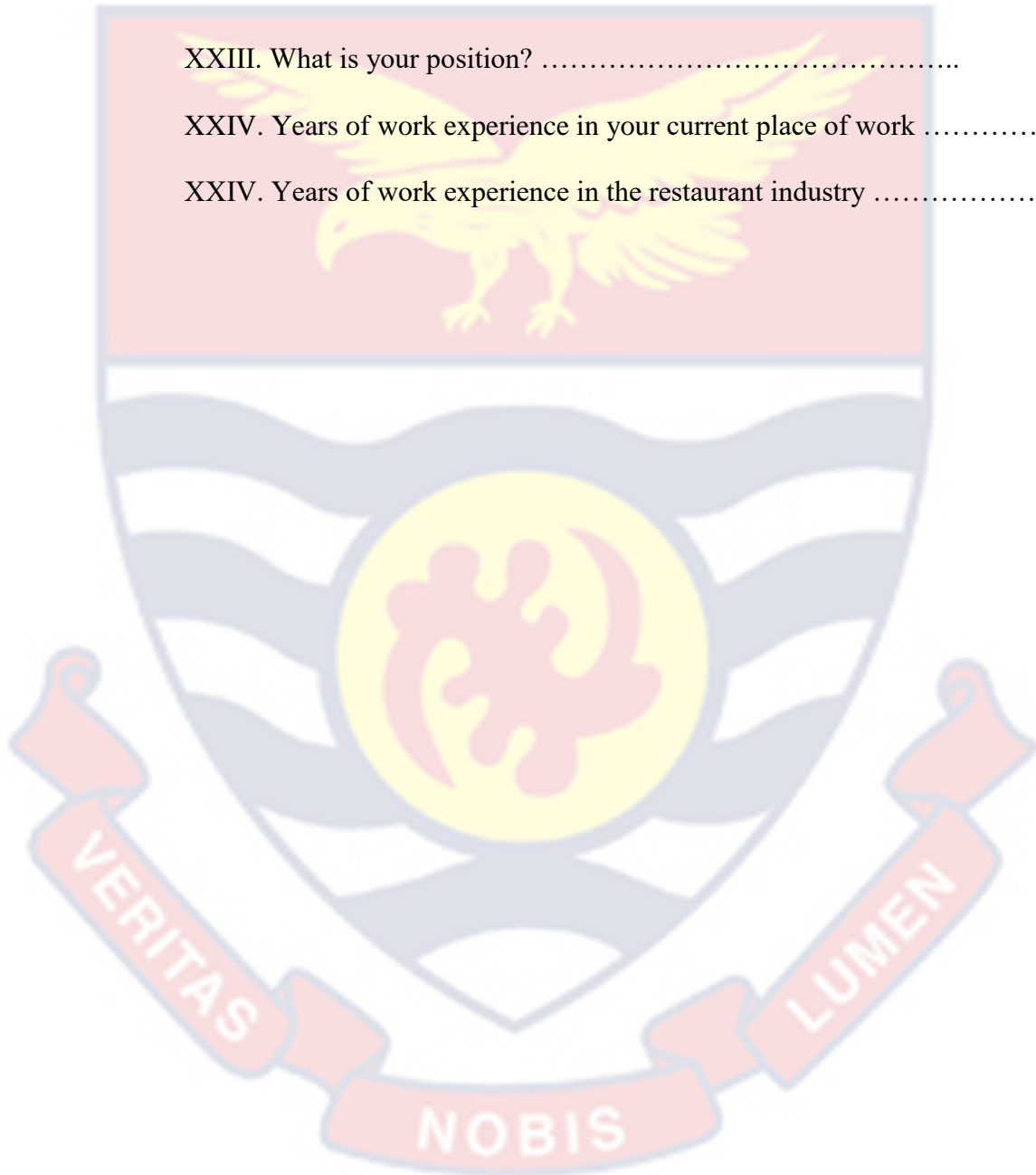
XXII. Mode of Employment

- 1. Permanent
- 2. Casual
- 3. Contract
- 4. Internship/Attachment
- 5. Others (please specify) .....

XXIII. What is your position? .....

XXIV. Years of work experience in your current place of work .....

XXIV. Years of work experience in the restaurant industry .....



**APPENDIX B****INTERVIEW GUIDE****UNIVERSITY OF CAPE COAST****FACULTY OF SOCIAL SCIENCES****DEPARTMENT OF HOSPITALITY AND TOURISM MANAGEMENT**

Dear Sir/Madam,

It will be of great appreciation if you could take time off your busy schedule to answer questions on the effects of staff workplace injuries and illnesses on your facility, the measures you have in place to prevent such outcomes and the barriers preventing you from implementing such measures. You are assured that, the findings from this study are strictly for academic purposes. You are assured of your confidentiality and anonymity. Your participation in this interview is voluntary and you can refuse to answer any question you do not feel comfortable with. You can also decide to withdraw from the interaction anytime you so wish. I therefore ask for your consent to proceed with the interview and also ask for your consent to record the conversation. It is estimated that the interview will take about 40-45 minutes to complete.

Thank you for your cooperation

Name of Interviewer:..... Date of interview: .....

Place of Interview: ..... Code for Interviewee:.....

Type of Restaurant: ..... Grade of Restaurant/Hotel.....



## **SECTION A: Effects of accidents, injuries and sicknesses on hotels and restaurants**

1. Incidence of injuries among kitchen staff (Probe for types, frequency and magnitude of injuries and the number and categories of staff involve)
2. Incidence of negative behaviours of kitchen staff (excessive drinking to work, excessive smoking of cigarette, tobacco or cannabis to work using of illicit drugs, caffeine, over eating or under eating at work (Probe for the severity of the behaviour and frequency of exhibiting the behaviour).
3. Consequences of staff injuries, illnesses or negative behaviours to work on restaurants or hotels. (Probe for worker absenteeism, presenteeism, medical bills, compensation claim, litigation, turnover, productivity, loss of reputation, negative publicity and loss of staff morale, temporal shut down of facility).  
Probe for number of days of absent and frequency of the occurrence of the consequences. Further, probe the cost of the consequences to the facilities in terms of amount spent.

## **SECTION B: Measures in place to ensure safety and health in the hotel or restaurant**

1. Are there measures in place to control and prevent hazards leading to injuries in the facility?
2. What are the measures you have put in place to control and prevent hazards and injuries in the facility? (Probe for policy, organizing safety training, provision of PPE and firefighting equipment, and servicing fire equipment, provision and maintenance of equipment and machinery, supervision and provision of first aid and first aider, conducting risk assessment, appointing

safety committee, maintaining health and safety management systems and evaluation procedure for hazards.

Probe for the frequency of organizing safety training, first aid training, providing PPE, providing and maintain equipment and machinery, and giving supervision in last 12 months).

**SECTION C: Barriers to the implementation of health and safety measures in the hotel or restaurant**

What are the barriers to implementation of health and safety measures in your facility? (Probe for policy, organizing safety training, provision of PPE and firefighting equipment, and servicing fire equipment, provision and maintenance of equipment and machinery, supervision and provision of first aid first aider conducting risk assessment, appointing safety committee, maintaining health and safety management systems and evaluation procedure for hazards.

Probe for the frequency of organizing safety training, first aid training providing PPE and in full, providing and maintaining equipment and machinery, and giving supervision in last 12 months).

## APPENDIX C

## OBSERVATION CHECKLIST

## UNIVERSITY OF CAPE COAST

## FACULTY OF SOCIAL SCIENCES

## DEPARTMENT OF HOSPITALITY AND TOURISM MANAGEMENT

It will be much appreciated if you allow me to carry out an observation in your facility on the health and safety measures you have in place to prevent the occurrence of injuries and illnesses and or any harm of your kitchen staff. You are assured that the findings will be used for only academic purposes. You are also assured of confidentiality and anonymity. Therefore, I seek your consent to go on with the observation and take photographs.

Thank you

Date: ..... Time: .....

Type of Facility: ..... Grade of Hotel/ Restaurant: .....

Areas of concern	Yes	No	Comments
<b>Health and Safety measures</b>			
1. Availability of first aid kits			
2. First aid kits fully stocked			
3. Availability of first aider			
4. Availability of medical room			
5. Availability of occupational accident/illness book on site			
6. Availability of emergency exits			
7. Directional signs to emergency routes			
8. Availability of emergency assembly point			

9. Availability of hand-rails on stairs			
10. Availability of fire blanket			
11. Availability of bucket of sand			
12. Warning signs displayed			
13. Labels on walkways			
14. Availability of smoke detectors in the kitchen			
15. Availability of fire alarms			
16. Walkways free of obstacle obstructing movement			
17. Exits free of obstacle obstructing movement			
18. Availability of fire extinguishers (check expiry date and weight)			
19. Presence of ventilation hood/heat extractors			
20. Positioning of gas cylinders outside kitchen environment			
21. Availability of ladder to reach objects at height			
22. Good housekeeping (tidy kitchen environment)			
23. Spacious working environment			
24. Separate washrooms for workers			
25. Good drinking water for workers			
26. Floors not slippery			
27. Appropriate storage places for sharp tools			



28. Well ventilated kitchen (Adequate air circulation – opened windows)			
29. Well illuminated kitchen without glare			
30. Isolate noisy appliances and procedures from entire kitchen environment			
31. Sound-absorbing panels used on ceilings, walls or floors			
32. Appropriately labelled chemicals			
33. Proper layout or arrangement of kitchen			
34. Safe storage of stock or cooking equipment			
35. No overloading of electrical sockets			
36. No visible electrical wires			
37. Free access to fuse boxes by staff			
38. No loud noise from tools and appliances			
39. Staff use mechanical devices for lifting/moving heavy objects/loads			

## APPENDIX D

## ETHICAL CLEARANCE

## UNIVERSITY OF CAPE COAST

## INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309  
 E-MAIL: [irb@ucc.edu.gh](mailto:irb@ucc.edu.gh)  
 OUR REF: UCC/IRB/A/2016/967  
 YOUR REF:  
 OMB NO: 0990-0279  
 IORG #: IORG0009096

28<sup>TH</sup> MAY, 2021

Ms. Susana Ohenewa Moreaux  
 Department of Hospitality and Tourism Management  
 University of Cape Coast

Dear Ms. Moreaux,

**ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2021/21)**

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research **Occupational Safety and Health in Restaurant Kitchens in Accra**. This approval is valid from 28<sup>th</sup> May, 2021 to 27<sup>th</sup> May, 2022. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD

**UCCIRB Administrator**  
 ADMINISTRATOR  
 INSTITUTIONAL REVIEW BOARD  
 UNIVERSITY OF CAPE COAST