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DEPARTMENT OF NURSING

DIPLOMA PROGRAMMES

ASSESSING THE KNOWLEDGE AND PRACTICE OF OCCUPATIONAL HAZARDS AMONG KITCHEN STAFF AT NMTC IN (SUNYANI, DROBO AND BEREKUM).

SUBMITTED BY:

AMEYAA ESTHER - 5170621

MENSAH PRISCILLA - 5368321

AMEYAA HANNAH - 5170721

[HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM]

AFFILIATED TO KNUST, KUMASI

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AMEYAA ESTHER - 5170621

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2022

DECLARATION

We hereby declare that this submission is our own work towards the Diploma in General Nursing and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of diploma of the University, except where due acknowledgement has been made in the text.

AMEYAA ESTHER	.....	09/03/2023
5170621	SIGNATURE	DATE
MENSAH PRISCILLA	.....	09/03/2023
5368321	SIGNATURE	DATE
AMEYAA HANNAH	.....	09/03/23
5170721	SIGNATURE	DATE

CERTIFIED BY:

MARTHA KYEREMAA	.....	.....
(SUPERVISOR)	SIGNATURE	DATE
MONICA NKRUMAH	.....	.....
(PRINCIPAL)	SIGNATURE	DATE

ABSTRACT

The study investigated the knowledge and practices of occupational hazards among kitchen staff at NMTC in bono region (Sunyani, Drobo and Berekum). A descriptive cross-sectional study design was used. The sample population was obtained using a judgmental/purposive sampling technique. A total of 30 kitchen staff were sampled for the study. The data for the study was collected by use of closed ended and open ended questions. The study found that the all (100%) the respondents indicated that they had ever heard kitchen hazard before. Majority (39%) had their source of information from their work place followed by radio station (26%) and community (19%) and (16%) heard from the TV station. Majority of the respondents also indicated that the problematic of hazard to human life, (39%) was loss of property, and (23%) of the respondents indicated hazards could lead to deformity, and (16%) of the respondents indicated that their view of hazard could destroy one's body image, (13%) of the respondents contributed it can lead to injury and (12%) of the respondents said it can lead to loss of life. Majority of the respondents indicated on the effects of hazard as (45%) burns, followed by (20%) cuts , again the respondents mentioned (16%) falls, followed by (13%) foreign bodies in the eye and (6%) as electric shock. In view of the respondents perception on handling kitchen hazards, majority of the respondents indicated (65%) checking of kitchen tools before use, followed by (35%) regular maintenance of equipment. The sources of hazards according to respondents are (45%) is insufficient light, followed by (23%) poor ventilation, again (19%) improper storage of equipment and (13%) is fire. The respondents view on how kitchen effects on health are (42%) burns, followed by (48%) illness, followed by (10%) deformities. In view of the respondent's knowledge of their work place contributing effectively in controlling

hazards, the majority (45%) is education, followed by (19%) regular assessment of kitchen tools and (16%) is proper use of kitchen tools. The study recommended that, Kitchen management of the various schools should ensure regular maintenance of kitchen equipment.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

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CHAPTER ONE

INTRODUCTION

Background of the study

A hazard is a potential source of harm (Adznam, 2019). Substances, events, or circumstances can constitute hazards when their nature would allow them, even just theoretically, to cause damage to health, life, property, or any other interest of valve. Kitchen safety awareness is crucial during food preparation and cooking as well as during cleaning-up and daily living; understanding the hazards present in kitchen can help you avoid accidents or subjecting your family to about food poisoning. Hazard is a situation that could be dangerous, like slipping and falling. Every kitchen has safety hazards. A hazard is any agent that can cause harm or damage to life, health, property or the environment (Sperber, 2001). Hazards can be dormant or potential, with only a theoretical probability of harm. An event that is caused by interaction with a hazard is called an incident. The likely severity of the undesirable consequences of an incident associated with a hazard, combined with the probability of this occurring, constitute the associated risk. If there is no possibility of a hazard contributing towards an incident, there is no risk. The highest proportion of reported major injuries to workers in 2009/2010 was caused by slips, trips and falls on level ground. The occupations most affected were kitchen assistants, chefs, and waiting staff. Slipping on a wet surface (grease, oil, and food) was responsible for 238 of the major injuries reported. Tripping over an obstruction (furniture, small items, work materials, boxes, and waste) accounted for 78 major injuries. The probability of that harm being realized in a specific *incident*, combined with the magnitude of potential harm, make up its risk, a term often used synonymously in colloquial speech. Hazards can be classified in several ways; they can be classified as natural, anthropogenic, technological, or any combination, such as in the case of the natural phenomenon of wildfire becoming more common due to human-made climate change or more harmful due to changes in building

practices (Zielasek, 2019). A common theme across many forms of hazards in the presence of stored energy that, when released, can cause damage. The stored energy can occur in many forms: chemical, mechanical, thermal, radioactive, electrical, etc. Situations can also be hazardous, for example, confined or limited egress spaces, oxygen-depleted atmospheres, awkward positions, repetitive motions, low-hanging or protruding objects, etc. They may also be classified as health hazards and by the populations that may be affected and the severity of the associated risk. In most cases, a hazard may affect a range of targets and have little or no effect on others.

Kitchen is one of the most important aspects in our life. We wait eagerly for the delicious foodstuffs of our kitchenette. However, many simple but repetitive kitchen activities can be a threat to our health. ({WHO}, 2020) With over 500,000 workplace injuries occurring annually in Australia and 6% within the food service industry, knowing the potential hazards and how to avoid them could save you or one of your colleagues from unnecessary harm.(Mondal, J., 2019) Such as peeling potatoes, chopping, knife cuts, Burn hazards, Injury from machines, Slips, trips, falls, Lifting injuries Head & eye Injuries, Crowded workspace risks, Chemical hazards, Fire hazards, Electric shock and picking up heavy pots and kettles, overstretching to reach to utensils or ingredients etc. can cause or aggravate pain & discomfort in hand, wrist, elbow, shoulder and neck (Physical hazards). (A Review on Mechanical & Physical Hazards at Domestic Kitchen, 2016) Musculoskeletal problems are not only the one, but various accidents also happen in domestic kitchen (Mechanical Hazards). Traumatic and repetitive injuries related to kitchen tasks include lacerations, cut, slips & falls, tendonitis, carpal tunnel syndrome, thermal strains, burn etc. (Song AH, 2016) Those menaces generally occur due to poor ergonomics, as poor work practices, poor quality equipment and poorly maintained equipment. Approximately 4% of all injuries are attributed to contact with a chemical or substance. Working with chemicals is a daily part of keeping your kitchen clean and sanitized.

Businesses in the foodservice industry are obligated to comply with the strict guidelines for the handling and preparation of food. The Food Authority hands out severe penalties for companies who fail to adhere to the act and publicly names offenders on their shame list. It is essential to understand the different use-cases of certain types of chemicals and sanitizers and the dangers if not used correctly. Check with your supplier as to any limitations or handling hazards and ensure; All chemicals are stored in a secure and dry location, ({WHO}, 2020) All bottles are clearly marked, Eye protection and gloves are working, Hazards can be classified as different types in several ways. One of these ways is by specifying the origin of the hazard. One key concept in identifying a hazard is the presence of stored energy that, when released, can cause damage. The stored energy can occur in many forms: chemical, mechanical, thermal, radioactive, electrical, etc. Another class of hazard does not involve the release of stored energy, but the presence of hazardous situations. Examples include confined or limited egress spaces, oxygen-depleted atmospheres, awkward positions, repetitive motions, low-hanging or protruding objects, etc. ({WHO}, 2020) Hazards may also be classified as natural, anthropogenic, or technological. They may also be classified as health or safety hazards and by the populations that may be affected and the severity of the associated. ({WHO}, 2020) In most cases, a hazard may affect a range of targets and have little or no effect on others. Identification of hazards assumes that the potential targets are defined. (Mondal, J., 2019) Biological hazards, also known as biohazards, originate in biological processes of living organisms and refer to agents that pose a threat to the health of living organisms, the security of property, or the health of the environment. Biological hazards include viruses, parasites, bacteria, food, fungi, and foreign toxins. A chemical can be considered a hazard if by its intrinsic properties it can cause harm or danger to humans, property, or the environment. Health hazards associated with chemicals are dependent on the dose or amount of the chemical. For example, iodine in the form of potassium iodate is used to produce iodized salt. (A Review on Mechanical & Physical

Hazards at Domestic Kitchen, 2016) Ergonomic hazards are physical conditions that may pose a risk of injury to the musculoskeletal system, such as the muscles or ligaments of the lower back, tendons or nerves of the hands/wrists, or bones surrounding the knees. Ergonomic hazards include things such as awkward or extreme postures, whole-body or hand/arm vibration. A mechanical hazard is any hazard involving a machine or industrial process. Motor vehicles, aircraft, and air bags pose mechanical hazards. Compressed gases or liquids can also be considered a mechanical hazard. A physical hazard is a naturally occurring process that has the potential to create loss or damage. Physical hazards include earthquakes, floods, fires, and tornadoes. Physical hazards often have both human and natural elements. (Song AH, 2016)Flood problems can be affected by the natural elements of climate fluctuations and storm frequency, and by land drainage and building in a flood plain, human elements. Another physical hazard, X-rays, naturally occur from solar radiation, but have also been utilized by humans for medical purposes; however, overexposure can lead to cancer, skin burns, and tissue damage. Psychological or psychosocial hazards are hazards that affect the psychological well-being of people, including their ability to participate in a work environment among other people. Psychosocial hazards are related to the way work is designed, organized, and managed, as well as the economic and social contexts of work, and are associated with psychiatric, psychological, and/or physical injury or illness. Linked to psychosocial risks are issues such as occupational stress and workplace violence, which are recognized internationally as major challenges to occupational health and safety. (Adznam O. , 2019)

In India as per available government data, every minute a fellow citizen gets killed in accidents. And it is well known that unsafe human actions are directly or indirectly responsible for about 98% of the accidents. It will not be far-fetched to mention that being physically, mentally and socially well, which definitely inter alia requires a well-planned and well-cooked proper diet, helps reduce chances of accidents. As it is said charity should begin at home, it may be

mentioned that safety perspective should start focusing from our own household kitchens, which has chances of fire, electrical accidents, burn, slip, trip, fall, cut injuries, MSDs and so on; being mentally alert and a quick response during accidental emergency are of utmost importance to reduce the chance of accident occurring, and even if it occurs, a prompt and appropriate action may lower the degree of severity. If the kitchen is properly designed, arranged and the individuals, mostly women, working there act accordingly, undue risks can be avoided easily. On the other hand, it has been found that practicing traditional Indian dance like Bharatanatyam dancing (BD) is beneficial for improving the response and reaction time of the individuals. (Lupindu, 2918) An attempt, in this backdrop, has been made from ergonomic perspective to assess the physical fitness, mental alertness and awareness about hazards in kitchen, of the homemakers practicing BD and daily spending a significant time in kitchen, also the physical infrastructure of the domestic kitchens. (Zielasek, 2019) It has been found that individuals practicing the BD regularly have significantly better physical fitness in terms of cardiorespiratory fitness indices and mental alertness in terms of reaction time compared to the individuals of similar age and socioeconomic status but not practicing any form of structured regular physical activity.

1.1 Problem Statement

Kitchen hazards are a health problem of great concern in developing countries. It is a major contributory factor in disabilities and injuries, and also affects the health of the individual. (Zielasek, 2019) However, many simple but repetitive kitchen activities can be a threat to our health. Such as peeling potatoes, chopping, and picking up heavy pots and kettles, overstretching to reach to utensils or ingredients etc. can cause or aggravate pain & discomfort in hand, wrist, elbow, shoulder and neck (Physical hazards). Researchers developed a criterion-referenced home kitchen observation instrument to asses BONO REGION s compliance of kitchen hazard

1.2 General Objectives

Assessing the knowledge and practice of occupational hazards among kitchen stuff at Bono Region (Sunyani, Dormaa, Drobo and Berekum).

1.3 Specific Objectives

1. To assess the knowledge level of hazards among kitchen stuff.

2. To determine the safety ways of handling kitchen hazards.

3. To identify the effects of practices hazards.

1.4 Purpose of the Study

The purpose of the study is to explore the knowledge and practice of occupational hazards among kitchen stuff at NMTC in Bono Region (Sunyani, Dormaa, Drobo and Berekum).

1.5 Hypothesis

Kitchen Staff are less likely to have knowledge on hazards

1.6 Significance of the Study

There are few studies in the public domain and especially in Ghana here of the knowledge of hazards among kitchen stuff.

The study will enable the researchers to establish and determine the safety ways of handling kitchen safety hazards. The findings will therefore assist to develop educational programs that will help victims to minimize dangers associated to kitchen hazards.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This per contains a review of relevant literature related to the research topic. It focuses in on the thematic areas of the study thus knowledge level of hazards among kitchen stuff, the safety ways of handling kitchen hazards, effects of hazards and factors.

2.1 Overview

The definition of "safety" and how it is understood seems to vary widely depending on who you ask: an experienced chef is likely to give a very different account of how to ensure safety in an industrial kitchen compared to that of a novice apprentice. Differences in safety knowledge as a function of experience and role have been documented in a range of work contexts (e.g., Carroll, 1998, Clarke, 1999) and point to several features of how knowledge about safety is learned and shared. First, safety is more than the absence of accidents (Rochlin, 1999). Likewise, "unsafe behavior" is undoubtedly more complicated than individuals acting "unsafely" even after learning the "proper way" of doing things. Green (1997) investigates people's perceptions of accidents and finds that individuals generally understand them as preventable through individual responsibility and basic competence, and this understanding varies by experience. Second, learning about safety is not a "linear practice" (Pink, Tutt, Dainty, & Gibb, 2010, p. 656). The construction of safety knowledge is a continuous and active process achieved through social engagement with other people who are also part of the learning (Gherardi & Nicolini, 2002a). In this way, learning about safety from on-the-job experience or having an intuition (i.e., "gut feeling") about safety comes from social interaction (Kamoche and Maguire, 2011, Nicolini, 2012). Indeed, social interaction is key to understanding safety in the workplace.

Mondal (2017), Kitchen is one of the most important aspects in our life. We wait eagerly for the delicious foodstuffs of our kitchenette. However, many simple but repetitive kitchen activities can be a threat to our health (Adznam O. , 2019). Such as peeling potatoes, chopping, and picking up heavy pots and kettles, overstretching to reach to utensils or ingredients etc. can cause or aggravate pain & discomfort in hand, wrist, elbow, shoulder and neck (Physical hazards). (Jaita, 2019) Musculoskeletal problems are not only the one, but various accidents also happen in domestic kitchen (Mechanical Hazards). Traumatic and repetitive injuries related to kitchen tasks include lacerations, cut, slips & falls, tendonitis, carpal tunnel syndrome, thermal strains, burn etc. (Lupindu, 2018). Those menaces generally occur due to poor ergonomics, as poor work practices, poor quality equipment and poorly maintained equipment.

2.2 Knowledge Level of Safety Hazards among Kitchen Staff

McCarthy (2019) conducted a cross sectional study to determine the knowledge level, attitude and practice levels regarding kitchen safety hazards in Northern part of America. The objective of this study was to examine the relationship between food safety self-reported food-handling behaviors and cognitions of young adults to observed food-handling behaviors which is one of the kitchen hazards. Participants were 153 young adults (mean age 20.74±1.30 s.d.) attending a major American university. Each prepared a meal under observation in a controlled laboratory setting, permitted researchers to observe their home kitchen and completed an online survey assessing food safety knowledge, behavior and psychosocial measures. Descriptive statistics were generated for participants' self-reported food-handling behaviors, psychosocial characteristics, knowledge, food preparation observations and home kitchen observations. Determinants of compliance with safe food-handling procedures while preparing a meal and home food storage/rotation practices were identified using backward regression models.

Conclusion: Kitchen hazards should be focused on proper handling of kitchen equipment. Food safety education directed toward young adults should focus on increasing awareness of FBD and knowledge of proper cross-contamination prevention procedures to help promote better compliance with actual safe food handling.

Fire Safety Engineering Group in, Faculty of Liberal Arts & Sciences, University of Greenwich (2018) conducted a study aiming to identify knowledge on kitchen hazards, attitude and practice levels regarding hazards among kitchen stuff. This study was also conducted to identify the associations between knowledge, attitude and practice and socio- demographic and kitchen stuff characteristics.

Current understanding of dwelling fire injury outcomes is impacted by data limitations, confounds, and failures to adequately examine occupant behaviour. For instance, research rarely considers: occupant and kitchen perception of fire hazard properties (e.g. size of flames/smoke when first encountered); resultant engagement (enter smoky room, tackle flames); whether hazard size percepts are accurate when recollected for investigators; and what the best recollection method is. Two experiments (N = 141, 132) presented short videos of kitchen fires where hazard size was either Small, Mid or Large. Immediately after seeing this (Experiment 1), or after a delay (Experiment 2), participants' performance at recollecting hazard size and their willingness to (hypothetically) engage with the hazards was tested. Recollection performance was compared across three methods. Interestingly, free recall resulted in poor performance but performance improved by 2–3 times when using two types of layperson-friendly descriptors (text, pictures) that allowed hazard size to be referenced to other scene elements. Pictures had a slight advantage over text descriptors. Larger hazards were recollected less accurately than small ones, albeit still somewhat meaningfully; the exception was mid-sized smoke and attentional narrowing effects are discussed. Importantly, while

increased hazard size reduced willingness, a concerning percentage of participants nevertheless considered engaging with the largest hazards; such risky behaviors may explain injury outcomes. Prior fire experience and gender affected recollection and willingness, often interacting with hazard size. Delayed recollection and individual differences did not. These findings suggest occupant and kitchen stuff behaviour, characteristics and hazard size data need capturing to help assess fire injury risks. This research provides a platform for understanding how to enhance both safety communication messages and more importantly shared safety learnings post-accident or other safety occurrences. (Tripathy, 2018)

2.3 Safety Ways of Handling Kitchen Hazards.

Adam and Fraise (2020) conducted *a* study in Middle East of Asia. The study aims to explore safety measures on kitchen hazards. The study recommends that, extensive public education on kitchen hazards and its implications. Household water treatment and safe storage ensure drinking water is safe for consumption. These interventions are part of the approach of self-supply of water for households. (Thomas, 2017). Drinking water quality remains a significant problem in developing and in developed countries; even in the European region it is estimated that 120 million people do not have access to safe drinking water. Point-of-use water quality interventions can reduce diarrheal disease in communities where water quality is poor or in emergency situations where there is a breakdown in water supply. Since water can become contaminated during storage at home (e.g. by contact with contaminated hands or using dirty storage vessels), safe storage of water in the home is important. Methods for treatment of drinking water at the household level include: Chemical disinfection using chlorine or iodine, Boiling, Filtration using ceramic filters, Solar disinfection – Solar disinfection is an effective method, especially when no chemical disinfectants are available, UV irradiation – community or household UV systems may be batch or flow-though. The lamps can be suspended above the water channel or submerged in the water flow, Combined flocculation/disinfection systems

– available as sachets of powder that act by coagulating and flocculating sediments in water followed by release of chlorine, Multibarrier methods – Some systems use two or more of the above treatments in combination or in succession to optimize efficacy and Portable water purification devices.

Hygiene is a series of practices performed to preserve health (Baral, 2022) . According to the World Health Organization (WHO), "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases." Personal hygiene refers to maintaining the body's cleanliness. Hygiene activities can be grouped into the following: home and everyday hygiene, personal hygiene, medical hygiene, sleep hygiene and food hygiene. Home and every day hygiene includes hand washing, respiratory hygiene, food hygiene at home, hygiene in the kitchen, hygiene in the bathroom, laundry hygiene and medical hygiene at home.

Hazard analysis and critical control points, or HACCP (Arboleda-Flôrez J, 2020), is a systematic preventive approach to food safety from biological, chemical, and physical hazards in production processes that can cause the finished product to be unsafe and designs measures to reduce these risks to a safe level. In this manner, HACCP attempts to avoid hazards rather than attempting to inspect finished products for the effects of those hazards. The HACCP system can be used at all stages of a food chain, from food production and preparation processes including packaging, distribution. All other food companies in the country are required to register with the FDA under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, as well as firms outside the Country that import food to the nation, are transitioning to mandatory hazard analysis and risk-based preventive controls (HARPC) plans. (WHO, 2020). A food safety-risk analysis is essential not only to produce or manufacture high quality goods and products to ensure safety and protect public health, but also to comply with international and national standards and market regulations. With risk analyses food safety systems can be strengthened and food-borne illnesses can be reduced. Food safety risk analyses

focus on major safety concerns in manufacturing premises—not every safety issue requires a formal risk analysis. Sometimes, especially for complex or controversial analyses, regular staff is supported by independent consultants. (Earnshaw, 2020)

A study conducted by Madeleiene and Wendeler (2020), which aims to clarify the correlation between kitchen work-related burns and cuts and job stress, a self-administered questionnaire survey was conducted involving 991 kitchen workers among 126 kitchen facilities. The demographics, condition of burns and cuts, job stress with the Brief Job Stress Questionnaire (BJSQ), health condition, and work-related and environmental factors were surveyed. Multiple logistic regression models and trend tests were used according to quartiles (Q1, Q2, Q3, and Q4) of each sub-scale BJSQ. After adjustment for potential confounding variables, burns/cuts were associated with a higher score category (Q4). The ORs of the burn/cut injures increased from Q1 to Q4 with job demands (*p* for trend=0.045/0.003), psychological stress (*p* for trend<0.001/0.001), and physical stress (*p* for trend=0.006/0.005), respectively. These findings suggest that kitchen work-related burns and cuts are more likely to be correlated with job stress, and the higher the job stress score, the higher the frequency of burns and cuts among kitchen workers.

2.4 Effects of Practices on Hazards

A study conducted by Zhang and Wang 2019, the objective of the study is review of effluents and health effects of cooking and the performance of kitchen ventilation.

Cooking particles have been associated with cardiac, pulmonary, dermal and renal toxic effects (Sjaastad *et al.*, 2016). Many airborne substances that are released from cooking are potentially harmful (Shields *et al.*, 2017). The hazards of cooking particles increase with the rise in the concentration and reduction in the particle size (Chowdhury *et al.*, 2015; Sharma and Balasubramanian, 2018). Ultrafine particles (UFPs, diameter less than or equal to 0.1 μm) have

a large specific surface area and are prone to attaching to large numbers of viruses, bacteria, and organic matter (Zhao *et al.*, 2015). UFPs emitted during cooking are thought to cause oxidative stress in lung cells (Beck-Speier *et al.*, 2015) and enhance lung inflammation and allergic reactions (Alessandrini *et al.*, 2016). There is a consistent positive correlation between the particulate pollutants released from cooking and risk of lung cancer. This explains why nonsmoking women have a high chance of developing lung cancer in China, the West, and Southeast countries (Seow *et al.*, 2018; Wang *et al.*, 2017; Wang *et al.*, 2019). Previous studies have shown that respiratory diseases, such as rhinitis, emphysema, asthma, abnormal lung function, and increased lung cancer mortality among hotel and restaurant staff, are associated with exposure to COFs (Ko *et al.*, 2019; Svendsen *et al.*, 2021). The poor lung function of chefs can be attributed to a single or a combination of the indoor air pollutants, such as polycyclic aromatic hydrocarbons (PAHs) and carbonyl compounds (Singh *et al.*, 2016; Wong *et al.*, 2016). The International Agency for Research on Cancer classifies COFs from high-temperature frying as "possible human carcinogens" (IARC, 2015). The potential hazard of COFs depends on exposure, which is a function of concentration and time. Exposure to cooking-related pollutants occurs within commercial spaces such as restaurants, commercial kitchens, residences, neighborhoods, and urban areas from the aggregation of cooking emissions. Emissions result from fuel combustion and from food preparation. For fuel, there are large differences among solid, liquid and gaseous fuels and electricity. For food preparation, the cooking activity (cooking method, cooking temperature, and edible oil) and cooking style (Chinese or Western) are important. In this review, we explore information regarding the contamination level of cooking-generated PM and techniques using ventilation to control cooking pollution. To this end, we analyze the physicochemical properties of the cooking particles and summarize the potential effects of those pollutants in relation to their adverse impacts on human health. Moreover, comparative analysis of the factors that influence

concentration, chemical composition and propagation of cooking particles is conducted. Finally, the effect of kitchen ventilation on pollution removal is evaluated, involving exhaust hood performance, supply air strategy, and capture efficiency. Thus, this review will help us gain a better understanding of pollutants emitted from cooking, influencing factors, and control strategies.

Hood Performance, an efficient ventilation system is quite necessary to provide a comfortable, healthy and energy-efficient working environment (Kotani *et al.*, 2019; Han *et al.*, 2019). One significant element in the creation of a healthy working environment in the kitchen is the exhaust hood, which could significantly reduce the personal PM exposure (Poon *et al.*, 2016; Du *et al.*, 2017). Scholars have conducted much research on measures to improve the efficiency of fume extraction.

The submicron particles that have a small natural sedimentation rate and follow the movement rule of fluid account for more than 90% of the cooking particles. It is not only difficult to be captured and purified by the ventilation system but also more easily inhaled by the human body or in contact with the skin surface. In addition, the cooking particles are affected by ventilation and thermal plume at high temperatures, and their growth and diffusion characteristics are significantly different from other indoor particles. Therefore, it is difficult to achieve high C & C efficiency of cooking particles in real situations. Presently, improvement measures and air supply strategy of kitchen ventilation systems have been studied through experiments and numerical simulation methods.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter is about the study area where the research was conducted, how the study sample was picked out of the targeted population and the tools that were used for the data collection.

3.1 Study Area

The study was done in Bono Region of Ghana. The area is the place is consists of different ethnic groups in the Region. It is one of the 16 administrative regions of Ghana. It was carved out of the former Brong Ahafo Region. Bono regional capital is Sunyani which prides itself as the cleanest capital city and major conference destination.

Bono region shares a border at the North with Savannah Region, bordered on the West by Cote d'Ivoire International border, on the East by Bono East, and on the South by Ahafo Region. It has a population of about 1,208,649 as at 2022 population census. The area has a quite number made up of health training institutions with hospitality department (kitchen) attached to them.

3.2 Study Type

A non-interventional studies, precisely explorative studies was used to explore about the knowledge and practices of hazards among kitchen stuff at Bono Region (Sunyani, Drobo and Berekum).

3.3 The Study Population

The target population for the study consisted of kitchen staff in the selected various institutions in Bono Region which has a population of about 100 and the accessible population consist of kitchen staff in Nursing and Midwifery Training Colleges Sunyani, Berekum and Drobo

3.4 Study Design

A descriptive study thus one which tends to describe the characteristics of a phenomenon being studied was used for the study. The design was adopted because participants or subjects are observed in their natural and unchanged environment. The data collection in descriptive research allows for gathering in-depth information.

3.5 Sampling Technique and Size

Probability sampling technique was used to select the institutions in Bono Region, thus convenience sampling was used to pick the sample size at their setting, and thirty-one (31) kitchen staffs represent to the whole population to help facilitate our study. This method was used because, it is inexpensive and respondents are easy to reach.

3.6 Data Collection Methods and Instruments

Data collection was done through the use of structured questionnaires consisting of both closed-ended and open-ended questions for easy expression of views and ideas. This was chosen as the method of data collection because it is relatively cheaper, avoided embarrassment on the part of the respondents, and the complete anonymity of respondents. Questionnaires were shared with the kitchen staff in their work place during the time of food preparation. Questionnaires was explained to them how it could be filled.

3.7 Data Analysis Techniques

Descriptive statistics such as tables, bar and pie charts were used to present information processed from data. Data were entered and analyzed using the Microsoft Excel 2013 and results presented in the form of means, frequencies and percentages.

3.8 Ethical Consideration

An introductory letter was sent to the administration of the Nursing and Midwifery Training College, Berekum, Sunyani and Drobo for approval for the conduct of study. The respondents

were well informed about the purpose of the study and their consent was sought. Respondents were assured of anonymity and confidentiality by not providing any form of identification on the questionnaire. However, identification codes were used to represent the respondent according to their chronologic entry into the study.

Respondents were allowed to participate and withdraw from the study voluntarily at any time without any penalty.

3.9 Limitations of the Study

There were limited financial resources since no sponsorship was obtained, and also the period which was permitted for the research also coincided with academies which reduced the concentration to the work.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter deals with analysis of data collected from the field. It is very important to analyze the data to determine the significance and relevance of it. The analysis was done using statistics such as frequency distribution tables, pie chart and bar graphs. The analysis covers the background information of respondents, their knowledge and practices of occupational hazards among kitchen staff.

4.1 Background Information of Respondent

From the data solicited on the demographic profile among the respondents it came out to be that, 39% (12)were within the aged of 18-25years, 26% (8) aged of 26-33years, 23% (7) aged of 34-41years and 12% (4) above the aged of 41years.The marital status of the respondents, 48%(15) of respondents were married, 42% (13) single, 10% (3) divorced. Again about their educational background was enquired, 39% (12) junior high education, 23% (7)senior high education, 16% (5) tertiary education, 13% (4) primary school and 10% (3) no formal education. In obtaining their religion, 64% (20) Christians, 29% (9) Muslims and 6% (2) traditionalist. As shown in the table 1 below.

Table 1. Demographic Profile of Respondents

Age	**Frequency**	**Percentage %**
18 – 25	12	39
26 – 33	8	26
34 – 41	7	23
Above 41	4	12
TOTAL	31	100
MARITAL STATUS	**FREQUENCY**	**PERCENTAGE%**
Single	13	42
Married	15	48
Divorced	3	10
Widow	-	
TOTAL	31	100
EDUCATIONAL BACKGROUND	**Frequency**	**Percentage %**
No formal education	3	10
Primary	4	13
Senior high	6	19
Tertiary	5	16
Junior high	13	42
TOTAL	31	100
RELIGION	**Frequency**	**Percentage %**
Christianity	20	65

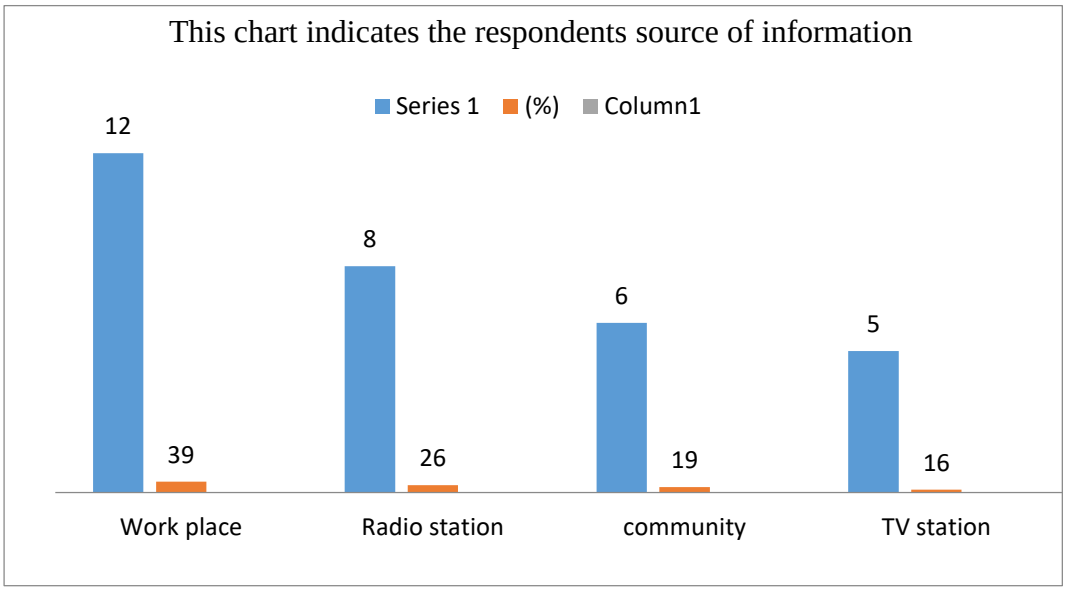
Islamic	9	29
Traditionalist	2	6
TOTAL	31	100

4.2: Respondents knowledge on the kitchen hazards

When respondents were asked to share their thought on kitchen hazard, 65% (20) indicated that kitchen hazards are the common risk that happens, 19% (6) indicated it can cause harm and 16% (5) indicated kitchen hazards are the dangers one is exposed to in the kitchen setting.

On gathering data on the sources of kitchen hazards it indicated 39% (12) of respondents heard the issues of kitchen hazards at their work place, 26% (8) discovered from radio station, 19% (6) heard from community and 16% (5) noted from TV station. As indicated in the chart 1 below.

Chart 1: Source of information on hazard



In trying to know respondents views on how problematic is hazard to human life, 39% (12) indicated hazard can cause loss of property, 23% (7) expressed that hazard leads to deformity,

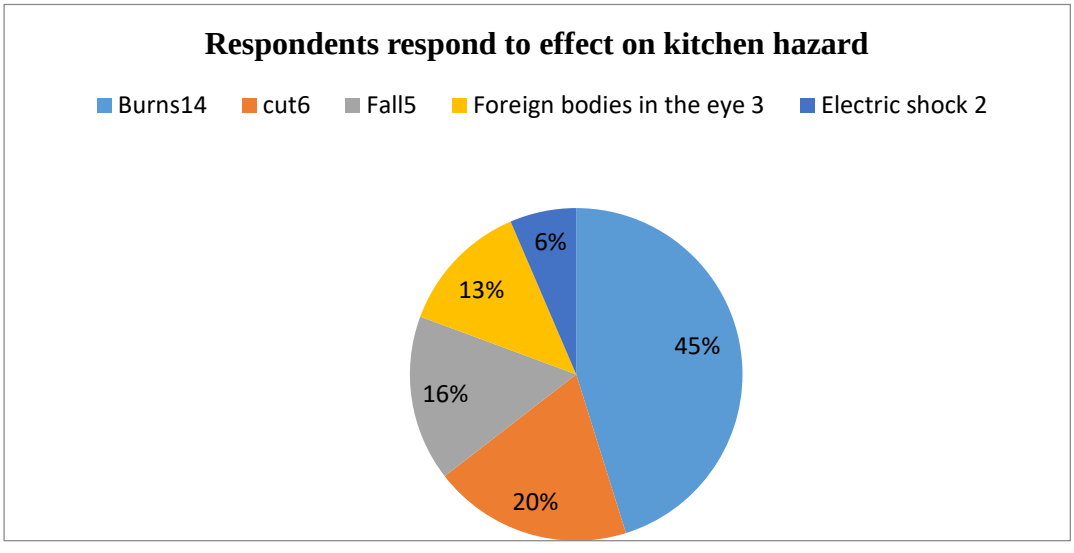
16% (5) indicated their view of hazards destroy one`s body image, 12% (4) attribute it leads to injury and 10% (3) expressed hazard cause loss of life. As shown in the table 2 below.

Table 2: Respondents on problematic hazard to human

How problematic is hazard to human life	Frequency	Percentage %
Death	3	10
Deformity	7	23
Distort body image	5	16
Injury	4	12
Loss of property	12	39

In gathering their view of respondents on effect of kitchen hazards, 45% (14) attributed to burns as effect, 20% (6) indicated cut as effect of hazards, 16% (5) attributed kitchen hazards lead to fall, 13% (4) expressed that foreign body in the eye and 6% (2) also added that hazards could results in an electrical shock. As shown in the chart 2 below.

Chart 2: Respondents respond to effect on kitchen hazard



4.3: Perception on Handling Kitchen Hazards

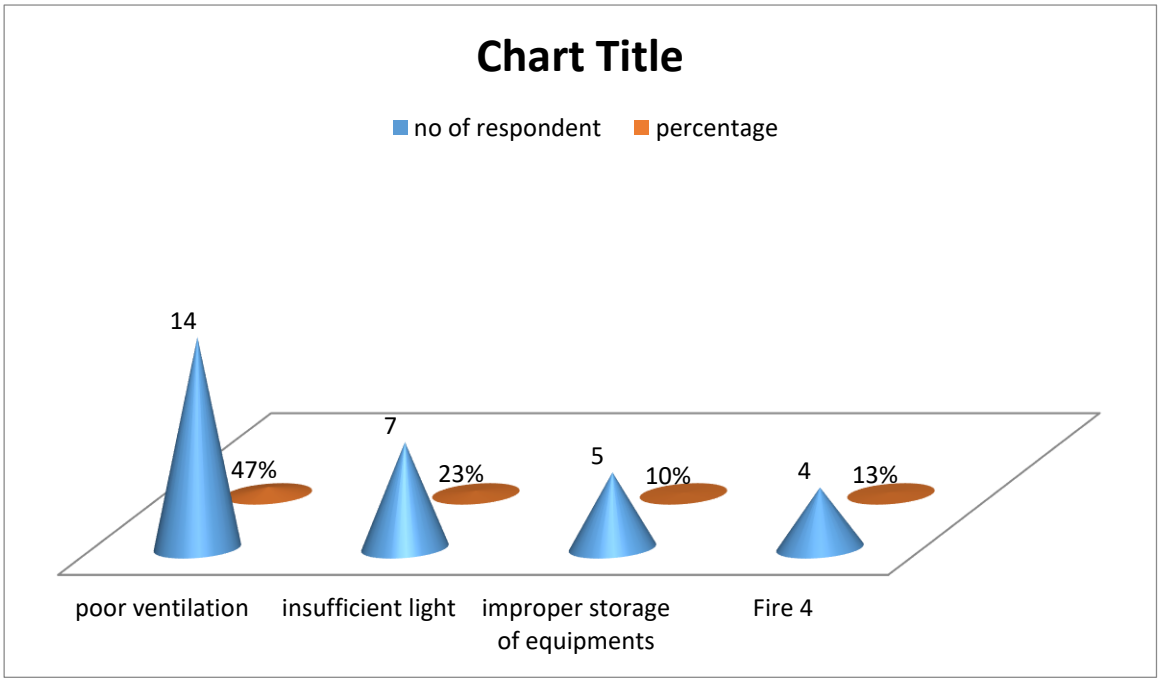
In soliciting for respondents views on the impacts of hazards on individuals, 65% (20) indicated deformity and 35% (11) contributed it causes loss of jobs. As shown in the table 3 below.

Table 3: Safety ways of handling kitchen hazards

Safety ways of handling kitchen hazards	Frequency	Percentage %
checking of kitchen tools before use	20	65
regular maintenance of equipment	11	35

In trying to know respondents views on the source of hazards in their working area, 45% (14) indicated insufficient light, 23%(7) poor ventilation and 19%(6) storage of equipment and 13%(4) fire, also serve as a source of hazards. As shown in chart 3 below.

Chart 3: Respondents Source of Hazard in Their Working Area



4.3.2: How kitchen hazard affect health

In trying to know how kitchen hazards affect health, 48% (15) expressed it causes illness, again 42% (13) stated its cause burns and 10% (3) indicated it causes deformity. As shown in the table 4 below.

Table 4: How Does Kitchen Hazard Affect Health?

How does kitchen hazard affect health	**Frequency**	**Percentage %**
Causes illness	15	48
Causes burns	13	42
Causes deformities	3	10

In trying to know the respondents view on how does their work place contribute in controlling hazards, 65%(20) suggested education as a way to prevent hazard in kitchen, and 19%(6) expressed that regular assessment of kitchen tools will help in prevention, and16%(5) indicated Proper use of kitchen tools will help in prevention of kitchen hazards. As shown in table 5 below.

Table 5: How workplace contribute in controlling hazard in kitchen

How workplace contribute in controlling hazard in kitchen	**Frequency**	**Percentage %**
Education	20	65
Regular assessment of kitchen tools	6	19
Proper use of kitchen tools	5	16

4.4: Prevention of Kitchen Hazards

In trying to know respondents view on the prevention of kitchen hazards, 48%(15) indicated kitchen should be frequently swept and mopped, 23%(7) expressed sharp equipment should kept in safe places, 16%(5) stated there should be frequents update on education and 13%(4) disclosed using of proper tools and equipment in the kitchen.

In soliciting for the views of the respondents on how to control hazard in the kitchen, 65% (20) stated rules and regulations in the kitchen, again 29% (9)indicated fire extinguishers at vantage points and 6% (2) contributed items should be properly stored.

In gathering the views on the problems faced by respondents on controlling kitchen hazards, 39% (12) indicated lack of personal protective equipment, 26% (8) stated staffs not complying to rules and regulations set, 23% (7) stated not enough safety signs at work place and 12% (4) indicated getting hurt in the course of controlling disasters

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

5.0 Introduction

This chapter provides an in-depth look at the major findings that emerged out of the research, comparison of the analyzed data with findings from other literature, conclusion, and recommendations.

Discussions

The discussion was done based on the specific objectives of the study.

5.1 Knowledge on Kitchen Hazard

Assessing the knowledge level of the respondents in relation to kitchen hazard, the respondents have fair knowledge on the risk associated with the kitchen hazard 65% (20). This knowledge was acquired through workshop/workplace 39 (12). As the problematic hazard to human life was loss of property 39 (12) and finally its effects on individual is burns 45 (14) this means that burns is seen as the common cause of hazard at kitchen.

Differences in safety knowledge as a function of experience and role have been documented in a range of work contexts (e.g., Carroll, 1998, Clarke, 1999), and point to several features of how knowledge about safety is learned and shared. First, safety is more than the absence of accidents (Rochlin, 1999.)

5.2 Perception on Handling of Kitchen Hazards

The respondents perceived impact on hazards on individual is mostly deformity 65% (20) which have relation to insufficient lighting 45% (14) system at the work place which can cause illness yet they had a reasonable education 65% (20) on the hazard. In the assessment on the perception of handling kitchen hazards, the respondents have fair on impact of hazards in the kitchen. 65% (20) expressed that the impacts of hazard is deformities, 45% (14) source of

information was insufficient lighting followed by 48% (15) disclosed the effect of hazards on health was illness and 65%(20) stated that education is how their workplace contribute effectively in controlling hazards. This means that education is the most common in controlling of kitchen hazards.

Similarly, a study conducted by Madeleiene and Wendeler (2020), which aims to clarify the correlation between kitchen work-related burns cuts and job stress, a self-administered questionnaire survey was conducted involving 991 kitchen workers among 126 kitchen facilities. The demographics, condition of burns, cuts and job stress with the Brief Job Stress Questionnaire (BJSQ), health condition, and work-related are environmental factors which were surveyed. Multiple logistic regression models and trend tests were used according to quartiles of each sub-scale BJSQ. These findings suggest that kitchen work-related burns and cuts are more likely to be correlated with job stress, and the higher the job stress score, the higher the frequency of burns and cuts among kitchen workers.

5.3 Prevention on Hazard

The current study revealed the prevention on kitchen hazards, which indicated that kitchen should be cleaned and mopped 48%(15),and in controlling hazards there should be rules and regulations in the kitchen 65%(20), the problems faced when controlling hazards in the kitchen is lack of personal protective equipment by the respondents 39%12).

(Kotani *et al.*, 2019; Han *et al.*, 2019). Hazard analysis and critical control points, or HACCP (Arboleda-Flôrez J, 2020), is a systematic preventive approach to food safety from biological, chemical, and physical hazards in production processes that can cause the finished product to be unsafe and designs measures to reduce these risks to a safe level. In this manner, HACCP attempts to avoid hazards rather than attempting to inspect finished products for the effects of those hazards.

5.2 Conclusion

Respondents had fair knowledge regarding kitchen hazards. Respondents heard of hazards from workplace/workshop. Loss of property was the problematic hazard to human life, and the effects of hazards on life is burns. Deformity was the most impact hazard has on individuals, insufficient lighting was the most commonly known source of hazards among respondents. The major effect of hazard affecting health was that it causes illness. Education was the common way of controlling hazard in the workplace this is not surprising as majority had formal education 90%. Cleaning and mopping of floors are ways of preventing hazard and wearing of personal protection equipment were all mentioned as ways to control hazards in the kitchen by respondent. Lack of personal protection equipment are some of the problems faced when controlling hazards in the kitchen by the respondents.

5.4 Recommendation

Based on the analysis of data obtained from the field, the following conclusions were drawn.

1. Kitchen management of the various schools should ensure regular maintenance of kitchen equipment.
2. Further research should be carried out on the effect of hazard on individual health
3. Matrons of various institutions should ensure proper storage of equipment.

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Your Ref. .....

Date November 21, 2022

TO WHOM IT MAY CONCERN

PERMISSION TO CONDUCT RESEARCH

I wish to introduce to you the under-listed names of final-year students of the College:

1. **Ameyaa Esther**
2. **Ameyaa Hannah**
3. **Mensah Priscilla**

As part of the pre-requisite for the award of Diploma in Midwifery, they are to conduct a research study, hence the data collection on **"Assessing the knowledge and practices of Occupational hazards among kitchen staff at NMTC in Bono Region (Sunyani, Dormaa, Drobo and Berekum)".**

I would be grateful if you could assist them with any material or help they may need to accomplish this task.

Thank you.

Yours faithfully

ACADEMIC CO-ORDINATOR - MIDWIFERY
HOLY FAMILY NURSING AND MIDWIFERY
TRAINING COLLEGE, BEREKUM

.....

Martha Kyeremaa
Supervisor

For: Principal

APPENDIX

QUESTIONNAIRE

INTRODUCTION

Dear Respondent,

We are students of the Holy Family Nursing and Midwifery Training College, Berekum researching the topic; **"knowledge and practice of occupational hazards among kitchen staff at NMTC in Bono Region (Sunyani, Drobo and Berekum)".**

Kindly answer the under-listed questions by ticking (√) the appropriate box or writing in the space provided. Any information you provide is confidential. Your opinion is not considered wrong. You can choose to withdraw your participation at any time without any penalty. It will take approximately 20 minutes to answer this questionnaire.

Thank you.

PLEASE TICK [√] THE APPROPRIATE BOX WHERE APPLICABLE

SECTION A: BIOGRAPHICAL INFORMATION

1. Age:

A. 18 - 25 years [ ]

B. 26 - 33 years [ ]

C. 34 - 41 years [ ]

D. Above 41 years [ ]

3. Marital status:

A. Single [ ]

B. Married [ ]

C. Divorced [ ]

D. Widow [ ]

E. Widower [ ]

4. Educational background:

A. No formal education [ ]

B. Primary [ ]

C. Junior High School [ ]

D. Senior High School [ ]

E. Tertiary [ ]

5. Religion

A. Christianity [ ]

B. Islamic [ ]

C. Traditionalist [ ]

D. Other specify……

SECTION B: RESPONDENT'S KNOWLEDGE ON KITCHEN HAZARDS

6. Share with us what you have heard about kitchen hazards at your work place.

……
……

7. Indicate your source of information on the hazards.

A. Workplace / workshop

B. Radio station [ ]

C. TV station [ ]

D. Community [ ]

E. Other specify……

8. How problematic is hazard to human life

……

…….....

9. What are some of the effects of hazards? (Please tick as many that apply)

A. Burns [ ]

B. Cut [ ]

C. Scalds [ ]

D. Falls [ ]

E. Foreign body in the eye [ ]

F. Electric shock [ ]

G. Other specify……

SECTION C: RESPONDENT'S PERCEPTION ON HANDLING KITCHEN HAZARDS

10. What impact dose hazard have on individuals.

……

……

11. What are the sources of hazards in your working area?

A. Fire [ ]

B. Poor ventilation [ ]

C. Insufficient lighting [ ]

D. Improper storage of equipment's [ ]

12. How does kitchen hazard affects health.

A. cause illness [ ]

B. cause burns [ ]

C. Deformities [ ]

13. How does your workplace contribute effectively in controlling of hazards?

……

……

SECTION D: PREVENTION OF KITCHEN HAZARDS.

14. How can we prevent hazard in the kitchen

……

……

15. How do we control hazard in the kitchen.

……

……

16. What problem do you face in controlling hazards?

……

……