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ASSESSMENT OF EMERGENCY PREPAREDNESS AND RESPONSE AT KASAPREKO COMPANY LIMITED

BY

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DECLARATION

I Barbara Serwaa Nanko hereby declare that apart from references to other people's works which have been duly acknowledged, this dissertation is as a result of my own independent work and has not been submitted for the award of any degree in any institution.

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DEDICATION

I dedicate this research work to the men in my life: My husband, Mr. David Nanko whose immense encouragement and support has brought me this far and my two sons Delvin and Jesse Nanko. Our little angel, Davida who always brought smiles to my face cannot be left out. A special feeling of gratitude goes to my loving parents, Mr and Mrs Adu –Poku for their support and words of encouragements. To my siblings especially Abigail, am most grateful.

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ABSTRACT

Background: Emergencies usually occur without warning. Therefore there is the need for an effective and efficient planning in any organization against emergencies. It is important to have knowledgeable personnel who are prepared and know what to do when an emergency occurs. This can be achieved through trainings, emergency drills and simulation exercises. Of much importance is the fact that in some industries and organizations with written down emergency plan and guidelines, staff preparedness for emergency may still be lacking.

Kasapreko Company Limited is a big local manufacturing company in Ghana located in the Spintex Industrial Area and manufactures both alcoholic and non-alcoholic beverages as well as bottled drinking water. It has a big workforce of about three hundred and fourty three (343) coupled with the volatile nature of some of the chemicals used in processing alcoholic beverages and the densely populated area in which it is located. Should any disaster happen, its impact on lives and properties will be devastating. It is therefore necessary to examine their emergency preparedness and response plan and assess their staff preparedness for any eventuality.

Objective: This study assessed how Kasapreko Company Limited as an organization, is prepared for an emergency by examining their emergency management plan and their employees' preparedness and response should an emergency occur.

Method: A cross sectional study was done using quantitative tools to gather data from employees of Kasapreko Company Limited on availability of an emergency preparedness plan, and their knowledge in respect to emergency preparedness procedures and actions. Open and close- ended questionnaires were used to gather information from 172 employees of Kasapreko Company Limited. A checklist adopted from FEMA, a nonprofit coordinating committee

(Federal Emergency Management Agency, 2013) was also used to evaluate their emergency preparedness plan.

Analysis: Data collected was coded and entered into a computer database using the Stata 15 software for statistical analysis. A descriptive analyses of all variables assessed was conducted and a Chi-square analysis was done to determine the association between the independent variables and emergency preparedness.

Results: Kasapreko Company Limited has an Emergency Management Plan which has all required components according to the standard checklist used. Responses from questionnaire showed that almost all the respondents (96.8%) knew about the company's Emergency Management Plan. Majority of the respondents viewed fire as the most likely emergency that may occur and 93.7% knew how to use fire extinguishers. 90% of respondents had knowledge about emergency management. The study showed that 88(69.8%) had attended workshop on emergency management and 96(77.4%) have participated in emergency drills or simulation exercises. Number of years of work in the company was significantly associated with knowledge on emergency management [X^2; $p<0.05$]. In addition, workshop attendance or training as well as participating in drills and simulation exercises was significantly associated with knowledge [Pearson X^2; $p<0.05$].

Conclusion: The study deduced that although there is a good emergency management plan available at Kasapreko Company Limited, not all components for emergency preparedness such as training of workers on emergency management and organizing drills were fully executed. Therefore a written down plan does not necessarily translate into preparedness.

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LIST OF ACRONYMS

Acronym	Meaning
CCOHS	Canadian Centre For Occupational Health And Safety
DHS	Department Of Homeland Security
EOP	Emergency Operation Plan
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
ICS	Incident Command System
IDNDR	International Decade For Disaster Reduction
ISDR	International Strategy For Natural Disaster Reduction
HSE	Health Safety and Environment
HSPD	Homeland Security Presidential Directive
NADMO	National Disaster Management Organization
NFPA	National Fire Protection Agency
NIMS	National Incident Management System
NRS	National Response Plan
OSHA	Occupational Safety And Health Administration
PPE	Personal Protective Equipment
SHRM	Society For Human Resource Managers
UN	United Nation

DEFINITION OF TERMS

Emergency: An occurrence that poses an immediate risk and create a situation in which the normal work pattern is suddenly disrupted and which requires urgent attention.

Disaster: An unexpected natural or man-made occurrence in which the normal work pattern is suddenly disrupted causing great loss and which requires urgent attention.

Emergency Preparedness: The range of activities designed to control a disaster or an emergency situation and also provide a framework for helping persons at risk to avoid or recover from the impact of the disaster or emergency.

Drill: A simulation of an emergency that is used to assess to improve the effectiveness of the organization's emergency plan.

Emergency Preparedness plan: An organization's formal written plan of actions to coordinate the response of employees in the event of an emergency.

Health: In relation to work, indicates not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety at work.

Mitigation: Reducing or preventing the likelihood of the occurrence of an emergency.

Risk: The probability of occurrence of an adverse effect from a substance on people or the environment combined with the magnitude of the consequence of that adverse effect.

CHAPTER ONE

INTRODUCTION

1.1 Background

Safety remains a basic requirement in every aspect of our lives and is the condition of being protected from a likely cause of danger or risk of injury (Wehmeier, McIntosh, & Turnbull, 2005, p.1289). Safety at the workplace is necessary for providing a safe working environment in which employees can work without fear of an impending emergency (Occupational Safety and Health Administration, 2013) Organizations that put safety first and incorporate it into the daily activities drastically reduce the probability of an emergency occurring. (Singer et al., 2009).

Disaster management in an organization involves all efforts put in place to ensure that all recourses needed for effective response in the event of an emergency are in place. All workers must be trained to be acquainted with how to use those resources. Emergency preparedness involves actions such as, preparing a planning processes to ensure readiness; formulating emergency procedures; making available assets essential for effective response; and developing expertise and capabilities through training to guarantee an active performance during any emergency (Haddow & Bullock, 2002).

The first step in emergency preparedness is preparing an emergency management plan and the first thing to do in the planning phase is to recognize and alleviate the circumstances that influence their occurrence. The objective is to avoid occurrence of disasters through removing all potential risk factors or hazards when possible. (Elliott, Swartz, & Herbane, 2010)

The process of carefully laid down plan to analyze, evaluate and to eliminate hazards will allow predicting, almost likely, the unexpected happenings that could possibly cause a disaster. With

this in mind, an organization will be able to put up an effective and up to standard emergency management plan. An internationally acceptable Disaster Management Plan (DMP) must, therefore, be centered on risk identification, prediction, and avoidance, as well as measures to manage the situation ((Elliott, Swartz, & Herbane, 2010).

In recent times although many advances have improved knowledge and technology, accident free designs and device have remained abstract. Even the well designed and supposedly very safe facility must be ready to control potentially hazardous events that may happen due to human or mechanical failure, or by natural forces such as floods or earthquakes. The need for efficient disaster management programs are essential considering loss of lives and property a disaster can cause. (Bradley & Lofchy, 2005) Emergency Preparedness is aimed at making available all equipments intended for reacting efficiently in the occurrence of an emergency and those entrusted with the responsibility to react should also be acquainted with what to do and how to use those available resources.(Sutton et al, 2006).

Several disasters that have happened across the world demonstrate the need for all to be better informed on how to handle emergencies. The mission of emergency preparedness is to protect individuals, communities, institutions, industries and the nation as a whole by coordinating and integrating all activities important develop the competencies of employees to prepare for, mitigate, respond to and recover from a disaster (FEMA, 2013). Emergencies can occur without warming, as such the more workers are prepared for them, the better they can react, therefore reducing the extent of damage, fear, panic and confusion associated with emergencies or disasters. (Bradley & Lofchy, 2005)

1.2 Statement Of Problem

Workplace accidents and emergencies may occur irrespective of efforts put in place to prevent their occurrence, therefore effective planning is necessary to efficiently respond to these emergencies when they occur. Several Occupational Safety and Health Administration (OSHA) principles oblige businesses to have an emergency action plan.

The absence of emergency preparedness plan in organizations and industries is a major threat to safety and lack of employee knowledge on emergency preparedness and response can result in excessive loss of life and property during a disaster (Lee, Smalley, Zhang, Pietz, & Benecke, 2009). Yet still, it is worthy to note that availability of a written emergency plan does not alone guarantee staff readiness. Preparedness is a state of readiness to react to environmental threats. As such education should be a continuous practice in order to create and sustain emergency readiness(Perry & Lindell, 2003).

In Ghana, it was reported that in 2010, 83 industrial fires occurred throughout the nation which caused an extensive damage to property. (Ghana National Fire Service, 2012). Again it was reported that averagely 165,000 individuals are displaced yearly by emergencies and disasters due to unpreparedness. (NADMO, 2016). The recent twin disaster; flooding and Goil fuel station fire in Accra in 2015 and some others brought to the fore the importance of emergency preparedness in any work environment (NADMO, 2016)

Kasapreko Company Limited is a big local manufacturing company in Ghana with a workforce of 343. It is located in the Spintex Industrial Area and manufactures both alcoholic and non-alcoholic beverages as well as bottled drinking water. There are many shops and buildings located close to it which also serve as dwelling places for several people at night. The facility attracts a great number of people to the area during the day time as well. Kasapreko Company

Limited, though has an adequate infrastructure in place, being a big company and located in an industrial area, coupled with its multitude of workers and the volatile nature of some of the chemicals used in processing alcoholic beverages, should any disaster happen, its impact on lives and properties will be devastating.

Also, over the past years since its operation, there have been some minor reported incidents which were contained, but fortunately there have not been any major incident. Could it be that their emergency systems are adequate and functional or it is just by luck? There has not been any comprehensive study on emergency preparedness and response at the organization and therefore there is the need to conduct such a study to examine their emergency preparedness and response plan as well as assess staff preparedness for any emergency. This will help identify gaps and strengthen their organizational policy in emergency management which will help to prevent any future occurrence.

1.3 Conceptual Framework

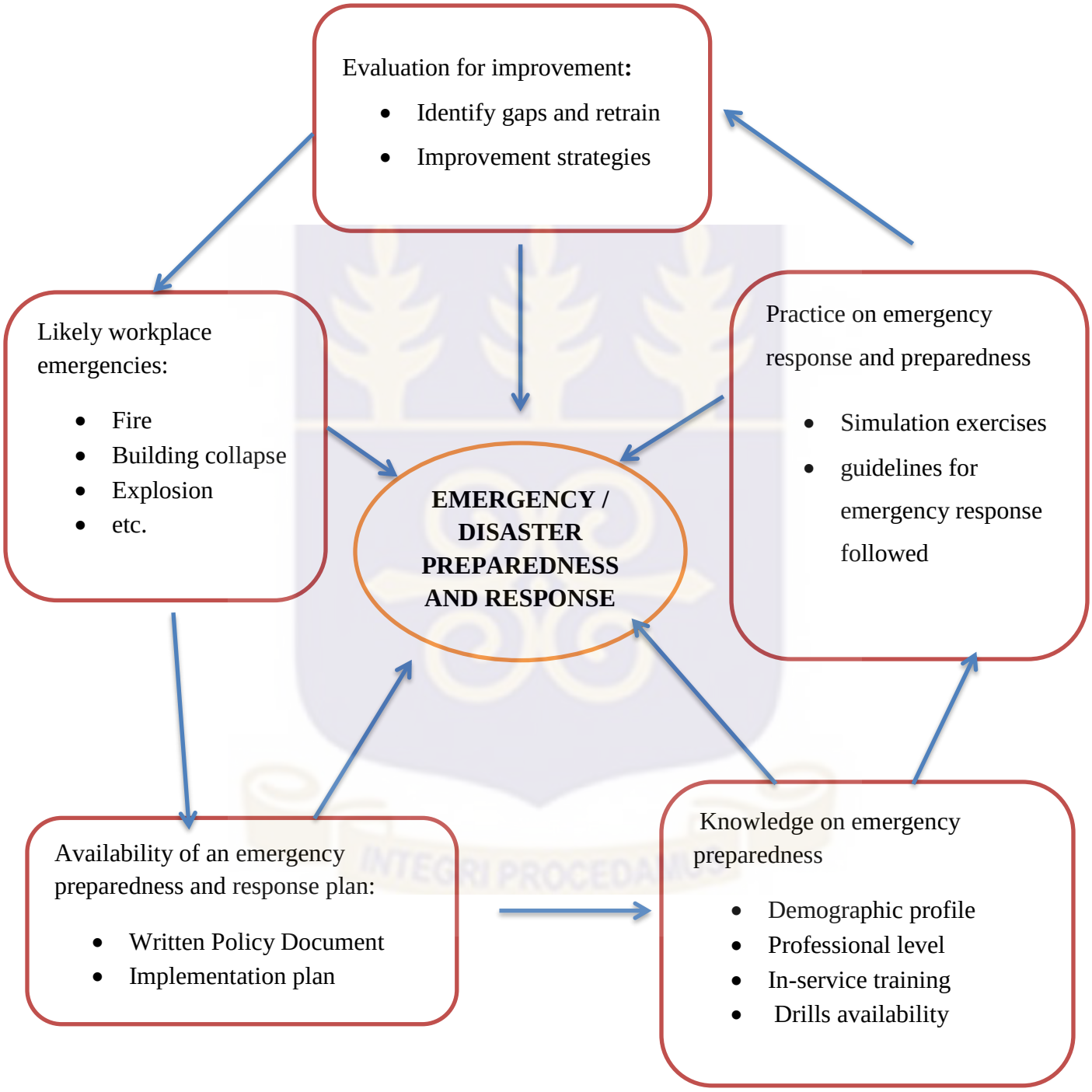

Figure 1: Conceptual Framework for emergency preparedness and response

To achieve emergency preparedness an organization has to use a cyclical approach of identifying possible or likely emergencies, developing a preparedness plan, developing skills and competencies through training and drills accompanied by evaluation which will identify gaps for retraining or reassessment of plan. According to (Lorincz et al., 2004), the response measures and protocols are rehearsed through training and simulation exercises which are well documented for future reference. In this approach, written plans turn out to be living documents.

Emergency or disaster preparedness is a continuous cycle that ultimately ensures organizational preparedness. This continuous cycle approach is defined by the continual evolution of the phases of the preparation and planning, training, assessment and evaluation (Fema, 2013). The aim of an emergency preparedness and response program is to attain an appreciable level of readiness to respond to any kind of emergency situation that may occur through programs that strengthen the skills and competencies of employees in an organization by building their technical and non-technical capacities.

Measures for attaining preparedness includes identifying and assessing workplace hazard and likely emergencies such of Chemical hazards and Ergonomic Hazards and developing a preparedness and response plan. Workers are trained and educated on how to implement the plan. To achieve this, an up- to- date Emergency Action Plan (EAP) must be prepared. EAP is a document that describes the plan for reacting to a range of possible hazards and likely emergencies (Fema, 2013). It serves as a written Policy Document for the organization.

Workers are trained in the various aspects of the emergency action plan. In-service training on emergency management is conducted and workers are taken through drills and simulation exercises. Implementation and reassessment of plan follows by putting measures in place and working according to protocols as indicated in the guidelines provided for emergency response.

Various emergency response options are employed. Evaluating efficiency and effectiveness of education and training can also involves the use of drill and emergency simulation. This can help assess how workers would likely respond to an emergency situation. Evaluation is done and gaps are identified during these exercises and further training done. Evaluation and feedback for improvement can also be got from workers through Institutional reports and Improvement strategies (Lorincz et al., 2004). Regardless of whether standards are met or not, evaluation and reassessment must be done. Feedback also helps an overall improvement on preparedness and response to any emergency that might occur.

1.4 Study Objectives

1.4.1 Research Questions

- Is an emergency preparedness and response plan available at Kasapreko Company Limited.
- Are there any gaps in the company's emergency preparedness and response plan?
- What knowledge do employees have on how to handle emergencies?

1.4.2 General Objective

To assess preparedness and response towards emergencies at KASAPREKO Company Limited.

1.4.3 Specific Objectives

- To examine the existing emergency preparedness and response plan at KASAPREKO Company Limited.
- To identify gaps in their emergency preparedness and response plan.
- To assess the knowledge of employees on emergency preparedness and response.

1.5 Justification

The study's main aim was to examine the emergency preparedness plan in KASAPREKO Company Limited and assess employee's knowledge about emergency preparedness and response. The results deduced from the study will enable the company to improve on their emergency plan if gaps are identified and employee will be educated on how to manage emergencies so that they can act proactively in case of an emergency.

This study will be an important contribution to the body of research concerning emergency preparedness. It is hoped that results from the study will be helpful to government, organizations and individuals in terms of policy formulation, implementation and monitoring of emergency preparedness. The research would also serve as a source of referencing to other related studies.

CHAPTER TWO

2.0 LITERATURE REVIEW

Modern emergency preparedness evolved from civic protection and political defense struggles that originated dating back from 1940s intended to safeguard people against the outcome of war and atomic exchange. In the 1970s, emergency preparedness was expatiated to consist of reaction to disasters that were triggered by natural, technical and man-made causes. (Alexander, 2005).

2.1 Phases of Emergency Management

Emergency preparedness and management is viewed globally as a four-phase method: Mitigation, Preparedness, Response and Recovery. Beginning in 2008, the Unit of Homeland Security in the United States, Federal Emergency Management Agency (FEMA) and other renowned institutions recommended that an additional phase be added to change to five phases to include Prevention (Fema, 2013). The prevention phase, being the additional and first phase involves putting measures in place to avoid the occurrence of an emergency. It involves following strict procedures and protocols. Prevention, preparedness and mitigation are closely related (Fema, 2013)

(Thywissen, 2006), describes the second stage of emergency management, Mitigation as the process of lessening the adverse effects of an emergency. The adverse effects cannot be prevented fully but the extent of damage can be greatly reduced by instituting various measures.

Preparedness, the third phase of emergency management, has been explained by (Perry & Lindell, 2003) as a state of promptness to respond to an emergency. This phase identifies the human and quantifiable resources made accessible to manage the emergency.

The fourth phase of emergency management, Response, is the application of all the preparation components in managing an emergency. This must be tested regularly to ensure viability and effectiveness (Coombs, 2007). The fifth phase which is Recovery, involves actions taken after a disaster to restore or improve conditions after an emergency has occurred. It may involve rehabilitation (Thywissen, 2006).

2.2 Emergency Preparedness Plan

Numerous efforts have been made to assess overall preparedness of an organization and to measure preparedness with response. Research has come up with various findings on emergency management, but the question of the ability of the preparedness phase to improve the response in the event of an emergency has come up in many scholarly discussions. Preparation is the best known factor in crisis or emergency management. This involves the development of an emergency management plan. It is worth noting that evaluating simulation exercises and instituting measures for feedback responses are requirements for preparedness (Coombs, 2007).

According to (Perry & Lindell, 2003), during emergency preparation, efforts should be aimed at developing a standard emergency plan to serve as a guide for assessing preparedness. The components of the plan may include but not limited to:

- Accurate knowledge on hazards and possible emergencies that may occur.
- Integrate plans to address identified hazards
- Test plan through drills and simulation exercises.
- Training of relevant personnel

In the past, national or international emergency management standards were not available to be adopted by organizations stating specifically what was required in an emergency preparedness program. In the past decade, this situation has changed tremendously, with the objective of establishing national and organization responsibilities in emergency preparedness. For example, the 2004 National Response Plan (NRP) in the United States and also Homeland Security Presidential Directives (HSPD) extended the duties of state-owned and native establishments (Gingerich, 2008).

The National Fire Protection Association (NFPA), which is universally accepted codes and standards institute, issued the NFPA 1600 Standard on Disaster/Emergency Management and Industry Stability Programs, 2004 Edition. This NFPA standard delivered new recommendations for establishments to enable them expand their existing crisis managing and business continuity plan. Currently, this criteria been extensively adopted by civic and private establishments as a guide, however diminutive facts are accessible to help report exactly how to merge crisis preparedness procedures into their regular business procedures. Some years past, disaster supervisors existed mainly for response relative to being actively involved in supporting to safeguard the safety of businesses. Emergency supervisors and other departmental supervisors need to change their thinking come to the realization that disaster preparedness adds to lasting existence of a business (NFPA, 2004).

2.3 Identification of possible emergencies

All readiness actions need be established from information you gather about possible emergencies and their likely impacts on the environment, organization and the community. Local disaster situations likewise offer a firm foundation for readiness efforts. Public outreaches

as well as formulation of strategies for giving out notification and information about disasters are necessary for the stability in operations in industries and to guarantee that the public has trust for them. Establishing corporations with various bodies such as public and private entities ahead of a disastrous event will help to encourage the distribution of assets through shared aid and facilitate competence building to convey information about emergency through channels that have been recognized. Organizations have to recognize all public entities that will need to be informed and then develop communication strategies and ascertain private assets that can be of use for reaction and reclamation or salvage (Manoj & Baker, 2007).

2.4 Employee knowledge on emergency preparedness

According to (Palin, P. 2010), every employee is responsible for their own safety during an emergency. As such having knowledge about emergency management is very essential. Most industries have a generic emergency and safety protocol that is tailored to that particular industry. Emergency policies require employers to organize training on emergency management for all their employees to increase their knowledge on how to manage emergencies.

Palin, P. (2010) in a study to assess employee knowledge in organizations, concluded that most workers developed knowledge and skill on emergency management after attending training. Palin, P. (2010). A study conducted by Laudicina, P. (2005), on assessment of employee knowledge on emergency management also showed that two-thirds of workers had knowledge on emergency management procedures. Again, Watson, S. (2004). in a study conducted in to assess the knowledge of employees on emergency concluded that employees have some knowledge on how to manage emergency.

2.5 Emergency Preparedness Personnel

According to FEMA, (2004). Three main groups of personnel have been identified under the emergency preparedness and intervention umbrella. Group one who are the principal responders comprise the front line workers, these are on-scene workforce on the field trained to handle the incident as it happens and initial a recovery process. This category is dominated by workers in various disciplines such as fire, law enforcement and medical emergency. Aside these, there may be other specialized personnel who deal with explosives or hazards who may also be part of the first responder group.

An incident commander is one who directs and controls activities in the course of initial reaction. The Incident Command System (ICS), has a ranked organizational arrangement which is usually responsible for ensuring the adequate availability of resources and logistics and effective operations and planning etc. ICS can be used irrespective of how great or slight the occurrence is. The ICS has been incorporated into the 2004 National Response Plan under the National Incident Management System (NIMS).

Variations exits amid ground responders in private and state sector organizations. In a native town management, the principal responders might be town workforce employed by the through the district or government. Majority of private sector establishments depend on municipal or other additional state-owned facilities. Big private businesses have their own emergency services providers such as reserved security and fire facilities. However, in instances where an organization may have its own initial responders, during certain emergency situation, state regulation enforcement, fire service agencies and other agencies get involved to salvage the situation. For example, if a private company has a dangerous materials spill, a service provider can be contracted to clear the mess, but the services of the Environmental Protection Agency,

and other agencies may be required. Also in the case of incidents involving criminal acts, law enforcement agencies are required to take charge and ensure calm and safety. (Elliott, Swartz, & Herbane, 2010).

When first responders are inaccessible in a particular town, suitable agencies will have to be called from a nearby town to assist. Normally shared aid arrangements between towns are made ahead of time. In cases where disasters is massive for a town and its agreed partners are unable to handle the situation, the region may arrange for supplementary persons to support. Private sector organizations may also have mutual aid agreements with other local private sector companies. similarly, in cases of the occurrence of a provincial tragedy, the native town or other civic division responders might not be available to provide support for private companies, as such these companies will have to use their own available resources.

2.6 Emergency Support Resources

The importance of effective management of resources is to categorize all necessary in-house and peripheral assets intended for emergency response and repossession. Recognizing needed resources, obtaining and packing and dispensing resources are consequently vital in all scopes preparedness. The stores supply department closely works with the planning department in order for all necessary items to be captured at the early stages of planning.

The model of managing assets encompasses human, quantifiable, non-quantifiable sources of provision such as sources for communicating information. Experienced and knowledgeable employee are a vital asset in this regard. Assets needed for Communication are very important for all response actions at all stages of the, though the medium for relaying information can

differ from using low technology to high technology. Emergency response actions—such as withdrawing one's self, lifesaving, emergency health care, fire suppression, clearing of rubbles, emergency conveyance, safety, and response management—require precise resource and logistical supplies that needs to be considered throughout the planning stage (Coombs, 2007; Manoj & Baker, 2007).

Modern gadgets used to support hen vital actions such as warning the public are also very important for effective response. Systems for giving out information as well as caution are vital to every commercial setup or public emergency response. These are required to give information about any emergency situation, warn employees of the possible impending risk, inform relations and off-duty personnel about the situation at the organization or within a sector, direct response activities, and have clients and merchants well informed as well. A plan for relaying information is needed to develop a cautioning method comprising developing code of behavior and procedures, systematic analysis and sustenance (Manoj & Baker, 2007).

The resource elements likewise involves efforts intended at gathering capital to ensure continuity of procedures when crucial resources are ruined. All organizations should bear in mind the likelihood that a substitute institution, together with the prime company, may be necessary for rescue and recommencement of work after a tragedy. In view of this emergency preparation for an organization may contain an alternative emergency processes focus, work to present laying-off into main response systems, as well as measures to detect, obtain, stock, and try back-up assets.

2.7 Emergency Training

International Occupational Health and Safety bodies believes that the implementation of an effective training program is one of the most important steps that an employer can take to enhance employee safety during an emergency. The training must include emphasis on the specific safety and emergency operations including shutdown, evacuation and other safe work practices. All employees need to be given initial training on emergency management during their induction (Nachtmann & Pohl, 2011).

According to Gebbie et al (2006), refresher training must be provided at least every three years, or more often if necessary, to each employee to refresh their memory. The employer, in consultation with the employees involved in operating the process, must determine the appropriate frequency of refresher training. The employer must determine whether each employee operating a process has received training on managing emergencies on the particular process plant and understood its implementation . A record must be kept containing the identity of the employee, the date of training, and how the employer verified that the employee understood the training.

2.8 Emergency Response

The importance of exercises and drills are observed in the response phase. Response to an emergency will only be appropriate if personnel have prior knowledge as to what to do during an emergency, this can be achieved through training and simulation exercises (Gebbie, Valas, Merrill, & Morse, 2006). The response action begins when the event leading to an emergency is detected or the emergency has actually occurred. It involves actions such as warning, personal

protection, evacuation, search, and rescue to be able to save lives and property and prevent aggravation of the emergency situation (Nachtmann & Pohl, 2011).

Respondents have to make rapid coordinating decisions. Response has to be fast involve all personnel. This requires a 24/7 approach to readiness where all employees are equipped with at least the basic knowledge and skill required to respond to emergency situations (Chen, Sharman, Rao, & Upadhyaya, 2008).

2.9 Commencement of Early Recovery

Corporate stability development emphases on escaping expensive lost time, misplaced profits, and employee lay-off due to disasters. Readiness for commercial salvage comprises elements such as making provisions for post-emergency facilities such as preservation information, tools renovation, and industrial scrutiny. It also involves getting workforce return to work within the shortest possible time even if they must work from a different place. Purchasing of hazard insurance is also necessary to offer monetary security against financial losses caused by disasters (Fema, 2013).

Planning in advance for emergency recovery should include the use of hazard and vulnerability analyses to determine which neighborhoods, residents, and businesses will be affected in any future disasters, and then, based on the findings, the organization decides ahead of time what should be done should any disaster occur. Decisions must be made regarding emergency ordinances (e.g., to restrict access to hazardous locations) as well as new measures that may be needed to be executed to acquire vacant land for redevelopment and to ensure that mitigation issues are properly addressed during the recovery process.

2.10 Emergency Evacuation

Not every disasters will necessitate employees to escape their premises. Nonetheless, it is essential to have escape or exit routes and ought be clearly documented as part of their emergency plan. Such preceding provision can be a lifesaver. Many studies show that individuals who have fore knowledge of evacuation processes and partake in evacuation drills are more effective in escaping safely than others who are unacquainted with the processes (Davis et al., 2004).

While escaping is largely believed to be a pre-event preventive measure, in other emergency circumstances (e.g., a tsunami or terrorist attack) the chance to evacuate in advance will not be possible, since mass evacuations may be the only possibility preceding such events. For example, many aged who were able to keep safe in their home after Hurricane Katrina were forced to evacuate afterwards when the ramparts neighboring New Orleans cracked open, resulting in severe flooding. As a result, evacuation planning must include strategies for both pre- and post-event evacuation. In addition to happenings witnessed throughout the nation following Hurricane Katrina, there is now a proven fact that many elders and disabled adults would be unable to evacuate on their own. For example, Hamilton G.C. & Sanders, (2006) established that grown person are less to be expected to evacuate their homes or vacate their property after disaster and evacuation cautions have been announced. (Pekovic, Seff, & Rothman, 2008) also perceived that following the four hurricanes that hit Florida in 2004, many older persons declined to leaving their homes even after their roof had been raged off.

2.11 Emergency Communication

Public alert and warning systems are important tools in saving lives and reducing fear and panic. During an emergency situation, most people rely on their televisions, radios, and social media to obtain additional facts. In the community areas (e.g., public structures, arenas), oftentimes announcements are limited to electronic billboards and loudspeaker systems if available. These approaches provide mainly for the mainstream public and do not offer sufficient accessibility to emergency alert and warning systems for persons with hearing, speech, and/or vision disabilities. As a result, persons with these types of incapacities may not receive the gen to make an informed decisions. This usually increases the possibility of muddle and the probability for bodily harm and unnecessary loss of life (Osterholm, 2005).

Speaking at the AARP conference in December 2005, Hilary Styron perceived that many individuals with disabilities want to prepare for disasters, but are not finding data that is effective and appropriate to their needs (Gibson & Hayunga, 2006). Her observations were based on findings from a 2004 survey of state and local emergency managers conducted by The National Organization on Disability. Fortunately, most emergency communication can be undertaken at minimal cost, and most disability-targeted communication can be implemented as a simple adjunct to more general strategies. Communication with members of the disability community should be viewed differently from communication with the general public (Bradley & Lofchy, 2005). This can be done well in advance before an event, as part of a preparedness outreach effort; Prior to an event, as an emergency warning or notification; During an event, as emergency information and instruction; or Following an event, as recovery information.

2.12 Emergency Coping and Restoration

In the USA, the Institute of Business and Home Safety (IBHS), - an organization responsible for laying out guidelines for construction of hurricane proof building sand creating of disaster safety plan, advocates that at the organizational level, planning activities should seek to develop strategies to address problems that are likely to develop when a disaster strikes, and training seeks to ensure that all those involved in the response will be skilled and knowledgeable enough able to carry out their duties.

However, disasters almost invariably bring surprises, and for that matter preparedness activities must also focus on improving creative thinking, the ability to improvise and innovate. Preparing to improvise may seem like a contradiction to preparedness, but in fact the two concepts are complementary. Preparations aimed at enhancing adaptive capacity in disasters may include extensive exploration of all the possible "what if" , various kinds of thought experiments, exercises in which employees are required to assume others' roles, and discussions centering on potential worst cases. Although an organization may have an evacuation plan, it is also useful to consider what would be done if the plan fails or if evacuation becomes impossible. The major lesson learnt from recent disaster experiences is that systems can and do fail and that disaster plans are usually inadequate in managing actual disasters (Rubin, 2005).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Area

STUDY AREA: KASAPREKO COMPANY LIMITED

The study was carried out at Kasapreko Company Limited located in the Spintex Industrial area in the Ledzokuku Municipality in the Greater Accra region of Ghana. Kasapreko Company Limited is one of the leading alcoholic and non-alcoholic beverage producers in Ghana. The company was first set up in 1989 and has evolved into a multinational company with state – of – the -art automated factory located off the Spintex road. Kasapreko Company Limited currently employs a total of three hundred and forty three (343) workers which includes forty one (41) contract workers. As an industry Kasapreko Company Limited employs workers with varied expertise.

3.2 Study design

The study design was a descriptive cross sectional study that used quantitative methods of gathering data.

3.3 Study Variables

3.3.1 Dependent variable

- Emergency preparedness and response.

3.3.2 Independent Variables

- Emergency preparedness plan
- Employee's knowledge.
- Types of emergencies

3.4 Study Population

The study population was made up of all permanent workers of Kasapreko Company Limited.

3.4.1 Inclusion criteria

All permanent employees of Kasapreko Company Limited qualified to be part of the study.

3.4.2 Exclusion criteria

All national service personnel and contract workers were excluded from the survey.

3.5 Sampling

3.5.1 Sample size estimation

Sample size for the study was determined using the Yamane sample size formula (Joskow, J., & Yamane, T.1967)

n= N / 1+N(e)2

Where:

n - The sample size.

N- Population size - 302

e – Level of precision or margin of error (MoE), e = 0.05

n = 302 / 1+302(0.05^2) = 302/1.755= **172**

A total sample size of **172** was used for the study.

3.5.2 Sampling

Out of a total of 302 workforce at Kasapreko Company Limited, 172 workers who fit the inclusion criteria were conveniently selected to be part of the study. Workers who were available at time of survey were sellected to be part of the study. Explanation was given on the purpose of the study and consent was sorted before respondents filled the questionnaires.

3.6 Data Collection Technique/ methods and tools

3.6.1 Checklist to assess emergency plan at Kasapreko Company Limited

To assess the existing emergency and preparedness plan and identify gaps, a standard checklist adopted from FEMA, was used (FEMA, 2013). The researcher did a walk through survey and compared what exists at Kasapreko Company with the standard checklist. This gave an insight into their emergency preparedness planning. The components of the emergency management plan includes; The planning team, codes and regulations review, internal resources and capabilities review, external resources review, plan development, emergency elements in place, emergency response procedures addressed, employee training, plan evaluation and modification etc.

The level of preparedness was determined by allocating a score to each component of the available plan. A response of 'YES' to a given question attracted a score of 1. A response of 'NO' was scored 0. A total score was generated, after which a score of less than 55 which

represents 70% out of the total score of 79 was classified as low level of preparedness and any score above 70% was classified as high level of preparedness.

3.6.2 Questionnaires to assess knowledge and response

Questionnaires were distributed to respondents after explanation of the procedure was explained to them. Quantitative data with both closed and open-ended questions was gathered. Some open-ended questions were used to make the respondents feel free to answer questions and also make it possible for the researcher to elicit unprompted opinions. Some details of the questionnaire includes; Respondents demographic information, knowledge of emergency likely to occur at work place, participation in emergency trainings, drills and simulation exercises, availability of personal protective equipments (PPEs) etc.

3.7 Data processing and Analysis

Quantitative data from the questionnaire were coded and entered into a computer database using the Stata version 15 software for analyzing. A descriptive analyses of all variables was assessed. Graphical representation were used to interpret most statistical proceedings. Charts were drawn with Microsoft Excel and Microsoft Word 2013 for word processing. Logistic Regression was used to determine the association between the dependent variable (level of preparedness) and the factors that influenced preparedness (independent variables). The results were presented in tables, which displayed the frequencies, percentages, crude odds ratios (ORs) and 95% confidence intervals (CIs) and p-value of less than 0.05.

3.8 Ethical Consideration

3.8.1 Ethical Clearance

Ethical clearance was sought from the Ghana Health Service Ethical Review Board. Permission to conduct the study was also sought from management of Kasapreko Company Limited. The study objectives and procedures, as well as possible risks/ benefits that may be associated with participating in the study was carefully explained in English to all participants before they were recruited. Persons eligible for the study were recruited after written informed consent has been obtained from them. Questionnaires were administered to those who agreed to participate and satisfy the inclusion criteria. They were informed that they have the right to stop at any point in the study.

3.8.2 Consent

A consent form which describes briefly the study and its importance was provided to participants to consents before the study commences. The participants were made aware that the study is a non-invasive one. They were also encouraged to ask any question they have concerning the study and their participation and these were all answered accordingly.

3.8.3 Procedures

The study involved using a check list to rate their emergency plan and answering questions from a questionnaire. The study involved no invasive procedure.

3.8.4 Risks and Benefits

The procedure did not involve any invasive procedure did not cause any discomfort to participants. The results of the study will be used for policy formulation that will enforce safety and precautionary measures among employees hence reducing disaster vulnerability.

3.8.5 Right to refuse or withdraw

Participation in this study was voluntary and participants were informed that they can choose not to answer any individual question or all the questions. They were informed that they are at liberty to withdraw from the study at any time. However, I encouraged them to participate since your opinion is important in determining the outcome of the study.

3.8.6 Anonymity and Confidentiality

I assured the participants that whatever information you will provide will be handled with strict confidentiality and will be used purely for the research purposes and their responses will not be shared with anybody who is not part of the research team. They were also informed that data analysis will be done at the aggregate level to ensure anonymity.

3.8.7 Data Storage and Ownership

All responses obtained were kept confidential.

3.9 Declaration of conflict of interest

The main purpose of undertaking this research study was to meet academic requirement to be awarded with an MSc Occupational Hygiene. There is no intention whatsoever to make monetary gains out of the study.

3.10 Dissemination of results

A copy of the result of the study was given to the managing director of Kasapreko Company Limited to help in reviewing their emergency preparedness and response and make improvements where necessary.

3.11 Pretest or Pilot Study

Sample questionnaire was field tested with employees of Aluworks Limited (Heavy Industrial Area-Tema) to evaluate the type of questions in the questionnaire and to ensure that the data that will be derived from the questions will be valid and reliable. The participants were asked how they found answering the questionnaire during the validity testing. This was to ensure that questions were appropriate and acceptable. This process helped in identifying main issues and formed the basis of the type of questions to be used in the study.

CHAPTER FOUR

4.0 RESULTS

4.1 (Questionnaire) Emergency preparedness and response among employees

4.1.1 Socio-demographic characteristics of participants

In all, a total of 172 questionnaires were distributed and only 126 were completed and returned, resulting in a response rate of 73.3%. the The Socio-demographic characteristics are presented in table 1. The 126 respondents comprises of males 92.1% and 10 females 7.9% of which 38.1% are ≤ 30 and 61.9% are > 30.

60.7% of respondents have worked in the company for ≤ 5 and 39.3% for >5. All the respondents have had some level of education. The majority have Diploma education (35%), 21.7% of them have secondary education and those who have certificates were represented by 8.3% of the workers. Undergraduate certificates were 30% and 5% have post graduate certificates. Information on religion revealed that majority being 88.3% of the respondents were Christians and 11.7% were Muslims.

Table 1: Socio-demographic characteristics of employees

Characteristic	Frequency	Percent
Gender		
Male	116	92.06
Female	10	7.94
Age (in years)	2	1.59
≤ 30	48	38.10
> 30	78	61.90
Years of work at facility		
≤ 5	74	60.66
>5	48	39.34
Education		
Secondary school	26	21.67
Certificate	10	8.33
Diploma	42	35
Undergraduate degree	36	30
Postgraduate degree	6	5
Religion		
Christian	106	88.33
Islam	14	11.67

4.1.2 Knowledge on emergencies likely to occur

Response to knowledge of the likely emergencies which can occur at their workplace is represented in the bar chart shown in Figure 2. Majority of the respondents (53.2%) recorded fire as the most likely emergency to occur at the company. The second emergency likely to happen

was excessive smoke and this was recorded by 16.1% of respondents. Flood was the least reported emergency that respondents think may occur at the facility.

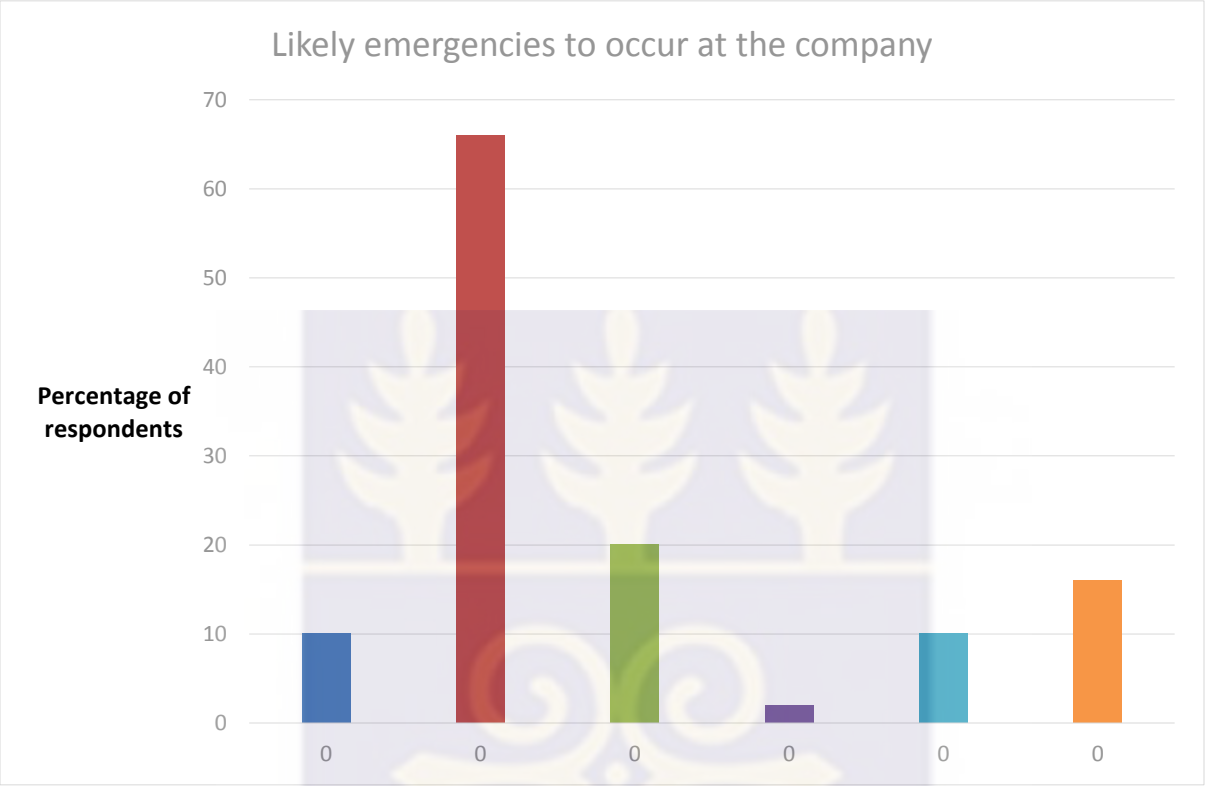

Figure 2: Proportions of emergencies that are likely to occur

4.1.3 Knowledge on emergency preparedness and response

This section reports on workers knowledge on what to do during an emergency, emergency exits, use of fire extinguishers and emergency training. The responses are shown in Table 2.

Table 2: Features of emergency preparedness and response

Characteristic	Frequency	Percent
Knowledge on action during an emergency		
Yes	108	90
No	12	10
Knowledge on emergency exits		
Yes	124	98.41
No	2	1.59
Knowledge on fire extinguishers		
Yes	124	98.41
No	2	1.59
Can use fire extinguishers		
Yes	118	93.65
No	8	6.35
Attended any training on emergency management		
Yes	88	69.84
No	38	30.16
Level of knowledge on emergency management		
Excellent	10	7.94
Good	90	71.43
Fair	24	19.05
Poor	2	1.59

Knowledge on response during emergencies was significantly higher (90%) as compared to those who do not have knowledge. Almost all respondents (98.4%) know where emergency exists are. Again, almost all the respondents knew where fire extinguishers are placed and 93.7% know how to use. Report on training attendance revealed that only 69% of respondents have attended a training on emergency management. When rating their level of knowledge a majority, 71.4% have good knowledge on current emergency management, 7.9% have excellent knowledge, 19.1% have fair knowledge and the least being 1.6% have poor knowledge.

4.1.4 Emergency plan, emergency drills and PPE.

Table 3: Knowledge on Emergency plan, emergency drills and PPE

Characteristic	Frequency	Percent
Emergency planning is for only administrative and head of departments		
Yes	24	19.67
No	76	62.3
Don't know	22	18.03
Knowledge about organization's written emergency plan		
Yes	122	96.83
No	2	1.59
Don't know	2	1.59
Are emergency drills conducted?		
Yes	100	79.37
No	18	14.29
Don't know	8	6.35
Participation in emergency drills in last 12 months		
Yes	96	77.42
No	28	22.58
Availability of PPEs		
Yes	122	100

As shown in table 3, 19.7% reported administrative staff and department heads to be solely responsible for emergency planning. Majority, 62.3% said no and 18% had no idea. Majority (96.8%) knew about the existence of the emergency plan. More than half of the respondents, 77.4% reported to have participated in emergency drill within the last 12months. All respondents reported on being provided with the right and adequate personal protective equipments (PPEs).

4.1.5 Emergency incident reporting, assembly point and evacuation

Table 4: Knowledge on emergency incidents, assembling points and evacuation

Characteristic	Frequency	Percent
Know who to report an emergency incident to		
Yes	124	98.41
No	2	1.59
Knowledge of assembly point		
Yes	120	95.24
No	6	4.76
How to evacuate during emergency		
Yes	120	95.24
No	6	4.76

As shown in table 4, almost all the respondents know the protocol for reporting an emergency incident and where the emergency assembly point was. 95.2% respondents also know how to evacuate themselves during an emergency.

4.1.6 Demographic characteristics and current knowledge of emergency/disaster management

The demographic characteristics of works at Kasapreko Company Ltd were tested against their current knowledge of emergency/disaster management. The results to these computations are shown in Table 5.

Table 5: Demographic characteristics and current knowledge of emergency management

	Rating of current knowledge of emergency management		Fishers exact test p-value
	Good N(%)	Poor N(%)	
Age			1
<=30years	38(79.17)	10(20.83)	
>30years	62(79.49)	16(20.51)	
Years of work			<0.001
<=5years	50(67.57)	24(32.43)	
>5years	46(95.83)	2(4.17)	

After conducting a fishers exact test of age and number of years of work against level of knowledge, results showed that age had no association with level of knowledge on emergency management. However, number of years of working in the facility had a statistically significant association with level of knowledge on emergency management.

Table 6: Workers attending workshop, knowledge on emergency and participating in drills

		Workers who have attended workshop or training on emergency management		
		Yes	No	Fishers' exact p-value
Knowledge on what to do during an emergency	Yes	78(72.22)	30(27.78)	0.017
	No	4(33.33)	8(66.67)	
		Participation in emergency drills and simulation exercise in last 12 months		
		Yes	No	Fishers' exact p-value
Knowledge on what to do during an emergency	Yes	80(74.07)	28(25.92)	<0.001
	No	2(16.67)	10(83.33)	
		Workers who have attended workshop or training on emergency management		
		Yes	No	Fishers' exact p-value
Participation in emergency drills and simulation exercise in last 12 months	Yes	62(73.81)	22(26.19)	0.217
	No	26(61.90)	16(38.10)	

A fishers exact test of workers who have attended workshop or training on emergency management and Knowledge on what to do during an emergency showed a significant association. This shows an association between training attendance and knowledge on emergency management. Also participation in emergency drills within the last 12 months showed a significant effect between knowledge on what to do during an emergency.

4.2 Emergency Plan Checklist

Out of the 79 components on the checklist used to assess the emergency management plan at Kasapreko Company Limited, a total score of seventy nine (79) which represents 100% was recorded. It was found that all the components in the checklist was available in the Emergency Management Plan of Kasapreko Company Limited. As such no gaps were identified in their emergency management plan. The components of the emergency management plan included;

The planning team, internal plans and policies review, codes and regulations review, internal resources and capabilities review, external resources review, plan development, emergency elements in place, emergency response procedures addressed, plan implementation, employee training, plan evaluation and modification etc. The plan had its purpose clearly stated and responsibilities of key personnel were well documented. The type of emergency that was likely to occur was indicated as fire. The procedures for addressing emergency threats were also well documented. The implementation plan was well written with a training schedule for all employees. The plan had evaluation and modification with yearly audit reports filed.

CHAPTER FIVE

5.0 DISCUSSIONS

5.1 Emergency Plan

In the past, international emergency management standards stating specifically what was required in an emergency preparedness plan was not available to be adopted by organizations. As such in 2004, National Response group in the United States as well as Homeland Security Presidential Directives (HSPD) put up an Emergency Preparedness plan (Gingerich, 2008). This standard provided guidelines for organizations in order to develop their own emergency plan. These standards have now been widely accepted and adopted by public and private organizations and Kasapreko Company Limited is one of them. The Company had an Emergency Plan available. Most workers had knowledge about the existence of the emergency plan. During a comparison of the checklist to the Emergency Plan of Kasapreko Company Limited 100% score was obtained because their plan contained all the major components that was in the standardized checklist and met all the requirements of an Emergency Plan.

Of notable importance was the Emergency Plan's implementation for the most identified possible emergency or disaster that could occur in the company. The plan identified fire as the most likely emergency that could occur. This is in support of the findings of a study done in the Tema metropolis of Ghana. The results of the study found out that 6 out of the 12 industries that were sampled had fire being the most likely emergency to occur (Boakye, E; Nyieku,I. E. 2010). in view of this, an in-house training on fire prevention and management is periodically organized for all workers in Kasapreko Company Limited. This may contribute to the main reason for almost all respondents knowing how to use the fire extinguishers. In addition to training their employees, the management of Kasapreko Company Limited realized that the closest Fire Service Station is at LEKMA

which is quite a distance away from Spintex, where the company is situated. In view of this and also as part of the Company's corporate social responsibility, the organization has put up a fire service station on their premises such that in the case of an unlikely event of fire the fire service workers are just a stone throw. This fire service station also serve as a community Fire Service Staion for the Spintex area. These findings agree with (Manoj & Baker, 2007) who established that it important to engage in a partnership between various entities such as public and private entities prior to a disaster event. This helps to influence the sharing of resources through mutual aid.

5.2. Emergency preparedness and response among employees

5.2.1 Socio-demographic characteristics

A majority of the respondents 116 (92.1%) were males with just a few females (7.9%). This indicated that the organization is mainly male dominated. This is in line with a similar manufacturing company which had almost all workers being males. (Nachtmann & Pohl, 2011). Majority of respondents were within the ages category of 31-40 years (47.6%). This could be due to the fact that production work is stressful thus requires more energetic and not too old workers. Also 44.3% majority has worked in the company between one to five (1-5) years.

5.2.2 Knowledge of Emergencies likely to occur , emergency management and planning

Based on their personal assessment of emergencies that were likely to occur at their workplace, majority of respondents stated fire as the most likely to occur. Of much importance is the people who were not sure of the likely emergency and those who responded none. These put together represented 21% of the respondents. This may indicate a low level of risk perception on their part. As such they may feel safe and unprepared for any eventuality. Most of the respondents know where their fire fighting equipments are located and a large majority of 93.7 % of the

respondents reported to know how to use it. This may suggest that workers were prepared for the most likely emergency and would be able to put a fire out should there be an incidence that requires their expertise.

In-service training is an essential component in building the knowledge capacity of employees. Kasapreko Company limited employs workers with diverse expertise. In the case of emergency management, only the Health, Safety and Environment department has the knowledge and expertise to manage it. However, during a disaster or an emergency, every employee is responsible for his or her own safety. As such it is a requirement that all workers should be trained on how to manage an emergency in terms of being prepared for it and how one will respond to it. Most respondents attested to knowing their role in emergency management. This affirms their response to knowing about their emergency plan. However, it is confirmed that knowledge about something in itself does not always translate into actions when the call time to act arrives (Nachtmann & Pohl, 2011).This can be particularly true because although 98.4% of the respondents reported to having knowledge on emergency management only 69.8% of them have received training on emergency management. 77.4% of respondents have participated in an emergency drill or a simulation exercise. According to (Perry and Lindell, 2003) simulations or drills are one most effective way of assessing preparedness and response, thus this exercise should involve all employees. However, it was a common complaint that not all workers were privileged to partake in a simulation exercise.

Most respondents had knowledge on the protocols regarding who to report an emergency incident to, assembly point and how to evacuate during emergency. This may suggest that they have knowledge of their response action and how to evacuate safely should an emergency occur. Studies show that people who are aware of evacuation procedures are more successful in safely

escaping buildings than are those who are unfamiliar with the procedures (Davis et al., 2004). However according to Hamilton G.C. & Sanders, (2006) after events observed across the nation following Hurricane Katrina it was concluded that many were unable to evacuate on their own after being given guidance and directions.

In this study it was also found that an appreciable number of respondents (37.7%) did not know that it was necessary for them to be involved in emergency planning in the organization. This supports the findings (Heijmans, 2001) that workers involvement in emergency planning was lacking as most workers did not see their participation as essential but rather the duty managers. After conducting a chi square test, some socio-demographic characters such as age and number of years of work had a significant association with the level of knowledge in emergency management. Again when workers who have attended workshop or training on emergency management were tested against Knowledge on what to do during an emergency it was deduced that training had a significant effect on knowledge of emergency management. This is in accordance with a study conducted by Laudicina, P. (2005), on assessment of employee knowledge on emergency management which showed that two-thirds of workers gained knowledge on emergency management procedures after being trained. Again, Watson, S. (2004). In a study conducted to assess the knowledge of employees on emergency after training concluded that employees had some knowledge on how to manage emergency after participating in emergency training. Relatively employees perception of level of preparedness and response were varied based on their knowledge and expertise. This is in support with findings of (Davis et al., 2004) who reported in their study on workers knowledge and perception on disaster that level of knowledge was varied depending on factors such as age and educational background

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The study found out that an emergency and disaster plan was available and all the components in it were according to the standard requirement. However the implementation plan which stated that all employees should be trained and participate in emergency drills was not fully implemented.

In general, workers' reported perception on knowledge of emergency management and response was good. This conclusion can be based on the fact that the responses for components such as knowledge on use of fire extinguishers, exit point, evacuation and knowledge on what to do during an emergency had reported responses above 50%. However employee participation in trainings and drills was not in line with requirements of emergency management specifications and standards.

6.2 Limitations or challenges

Sample size for study was not achieved due to time constraints and workers not having enough time out of their break time to participate.

All responses were self-reported by the respondents and not observed actions. As such may not necessarily translate into actual actions in the case of an emergency.

6.3 Recommendations

Based on the findings from the study the following are recommended:

1. A review of the implementation plan for all components of the company's emergency management plan.
2. Training on emergency management should be organized for all workers to enhance their knowledge and skill on how to manage emergency situations.
3. All employees should be given a thorough orientation on emergency preparedness during their induction to help reduce the gap of those who participate in trainings.
4. Simulation exercises and drills should be organized for all employees to evaluate their knowledge and assess their preparedness towards emergencies. This will help identify gaps in knowledge. Workers who need retraining are also identified during simulation exercises.

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APPENDICES

Appendix 1: EMERGENCY PLAN CHECKLIST

Name of Investigator: Barbara Serwaa Nanko

Date: ……..

Introduction: An emergency plan is an agreed set of arrangements for responding to and recovering from an emergency and it describes responsibilities, management structures, strategies, and resources for preparing, responding to, and recovering from disasters (WHO). Organizations should have a well-documented and tested emergency plan in order to respond in an efficient and effective way. Without an emergency plan, institutions may fail to respond effectively and efficiently and there may be improper use of resources. There may also be many points of command, with staff doing their work without effectively contributing to the response.

This checklist has been designed to assess the emergency plan of Kasapreko Company limited. It is based on the recommended components described by nonprofit coordinating committee (Federal Emergency Management Agency, 2009). Instructions: This checklist is for assessing the emergency plan of Kasapreko Company limited. Indicate with an (X) in the relevant column showing whether the component is available or not.

PLANNING TEAM	YES	NO
Planning Team established?	☐	☐
Planning Team Schedule Established?	☐	☐
Budget Developed?	☐	☐

INTERNAL PLANS AND POLICIES REVIEW

Evacuation Plan?	☐	☐
Fire Protection Plan?	☐	☐
Safety And Health Program?	☐	☐
Security Procedures?	☐	☐
Insurance Programs?	☐	☐
Employee Manual?	☐	☐

CODES AND REGULATIONS REVIEW

Fire Codes?	☐	☐
Electrical Codes?	☐	☐
OSHA Regulations?	☐	☐

CRITICAL SERVICES AND OPERATIONS REVIEW

Services provided by your company identified?	☐	☐
Operations vital to the continued functioning of the facility?	☐	☐
Equipment vital to the continued functioning of the facility?	☐	☐
Personnel vital to the continued functioning of the facility?	☐	☐

Services provided by vendors identified?	☐	☐

INTERNAL RESOURCES AND CAPABILITIES REVIEW

Personnel

Fire Warden(s)?	☐	☐
CPR Training?	☐	☐
First Aid Training?	☐	☐
Equipment	☐	☐
Fire Protection?	☐	☐
Communications?	☐	☐
First Aid Supplies?	☐	☐
Emergency Power?	☐	☐

Backup Systems (Arranged with other facilities)

Payroll?	☐	☐
Communications?	☐	☐
Customer Services?	☐	☐
Computer Support?	☐	☐

EXTERNAL RESOURCES REVIEW	YES	NO
Emergency Management Office?	☐	☐

Fire Department?	☐	☐
Police Department?	☐	☐
Emergency Medical Services?	☐	☐
Telephone Companies?	☐	☐
Electrical Utility?	☐	☐
Insurance Policy Review with Broker?	☐	☐

PLAN DEVELOPMENT

Plan Purpose?	☐	☐
Responsibilities of key personnel?	☐	☐
The types of emergencies that could occur?	☐	☐
Where response operations will be managed?	☐	☐

EMERGENCY MANAGEMENT ELEMENTS IN PLACE

Direction and Control?	☐	☐
Communications?	☐	☐
Life Safety?	☐	☐
Property Protection?	☐	☐

Community Outreach? ☐ ☐

Recovery and Restoration? ☐ ☐

EMERGENCY RESPONSE PROCEDURES ADDRESSED

Assessing the situation? ☐ ☐

Protecting employees, customers, visitors, equipment, vital records, and other assets? ☐ ☐

Getting the business back up and running? ☐ ☐

PROCEDURES FOR ADDRESSING EMERGENCY THREATS

Warning Employees and Customers? ☐ ☐

Communicating with personnel and community responders? ☐ ☐

Conducting an evacuation and account for all persons in the facility? ☐ ☐

Shutting down operations? ☐ ☐

Protecting vital records? ☐ ☐

Restoring operations? ☐ ☐

SUPPORT DOCUMENTS AVAILABLE	YES	NO
Emergency Call Lists –People responding, their responsibilities and phone numbers?	☐	☐
Employee Lists - Employees with their home phone numbers?	☐	☐
Resource Lists – Equipment and supplies that could be needed in an emergency?	☐	☐

DEVELOPMENT PROCESS	YES	NO
Task list identifying persons, tasks and timetables?	☐	☐
Needs of disabled persons and non-English speaking personnel?	☐	☐
Training schedule for employees established?	☐	☐

PLAN DISTRIBUTION		
Copies distributed to employees?	☐	☐
Current date and revision number on plan?	☐	☐

PLAN IMPLEMENTATION		
All personnel trained in procedures?	☐	☐
Orientation and Education Sessions?	☐	☐
Walk Through Drills?	☐	☐

Evacuation Drills?	☐	☐
Plan tested to assure that employees know what to do?	☐	☐

EMPLOYEE TRAINING ADDRESSES:

Individual roles and responsibilities?	☐	☐
Information about threats, hazards, and protective actions?	☐	☐
Notification, warning and communication procedures?	☐	☐
Means for locating family members in an emergency?	☐	☐
Emergency response procedures?	☐	☐
Evacuation, shelter and accountability procedures?	☐	☐
Location and use of common emergency equipment?	☐	☐

PLAN EVALUATION AND MODIFICATION

A formal audit of the plan conducted at least once a year?	☐	☐
Does the plan reflect lessons learned from drills and actual events?	☐	☐
Are photographs and other records of facility assets up to date?	☐	☐
Are the names, titles and phone numbers in the plan current?	☐	☐

APPENDIX II: INFORMED CONSENT

Institutional Affiliation

Department of Biological Environmental and Occupational Health Sciences (BEOHS): School of Public Health, College of Health Sciences, University of Ghana-Legon.

Background

Dear Colleague, my name is Barbara Serwaa Nanko and I am a student at University of Ghana, School of Public Health. In partial fulfilment of my Master's Degree in Occupational Hygiene, I am conducting a research on emergency preparedness of employees of Kasapreko Company Limited.

I would be very grateful if you could be a participant in this study. If you agree, you are kindly requested to complete the questionnaire below as accurately and completely as possible. The objective of the study is to assess your knowledge with regards to the management of emergencies. The study has been approved by the management of Kasapreko Company Limited and Ghana Health Services ethics committee.

The information you give will be kept confidential and your name shall not appear on the questionnaire. As a participant, the study is voluntary and you are under no obligation to fill the questionnaire. You can also drop-out of the study at any time if you do not feel comfortable.

The risks to you by participating in this project are minimal. However, it is possible you may be frustrated by the questions asked or the time needed to participate.

If you have any questions about this project or your participation, you can email me via (barbnanko@gmail.com) or call on 0244861307. You may also contact Madam Hannah Frimpong, GHS-ERC administrator on issues of ethics, on 0243235225 or 0507041223.

I hereby consent to take part in the research on Emergency preparedness and intervention among employees of Kasapreko Company Limited. The study investigator has explained to me the nature of the study and I understand that participation is voluntary and I can pull out of the study if I wish to do so. I am aware that there is no direct material or financial benefit to me accruing from participation in this study. I understand that I will not lose my current privileges by participating in this study. I understand that the information I give is confidential and my name shall not appear on the questionnaire. I have had an opportunity to ask questions and I fully understand the objectives of the study. I consent voluntarily to participation.

Name of Participant : ……..

Signature of Participant: ……

Date: ……

I have explained the nature of the study to the participant and have witnessed the signing of the consent form by the participant. I accept that the participant can pull out of the study if they wish to do so. Name of Researcher : ……..

Signature of Researcher: ……..

Date: …….

QUESTIONNAIRE Code: ☐ ☐ ☐

Section 1: Demographics

1. Gender? ☐ Male ☐ Female

2. Age at last birthday. ☐ Below 20 ☐ 20-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61+

3. How many years have you worked in your current position? ☐ Less than 1 year ☐ 1-5 years ☐ 5-10 years ☐10-15 years ☐ more than 15 years

4. What is the highest level of education that you have completed? ☐ Primary school ☐Secondary school ☐ Certificate ☐ Diploma ☐ Undergraduate Degree ☐Postgraduate Degree ☐Other(specify)…….

5. Religion: ☐ Christianity ☐Islam ☐Buddhist ☐Hindis ☐Africanism

6. Job position: …….

7. Department: ……

Section 2: Emergency knowledge

8. Are you aware of any disasters that have occurred in your area in the past 5 years?

☐Yes ☐No.

9. To your knowledge, which of the following emergencies is/are likely to occur in your area? (Please check all that is applicable- more than one answer if applicable)

☐Explosion ☐ Fires ☐ Excessive smoke ☐ Building collapse ☐ Flood ☐ None of the above ☐ Not sure ☐ other (specify)…….

10. Do you know what to during an emergency?

☐Yes ☐ No.

11. Are there emergency exits in your organization?

☐Yes ☐No ☐ Don't Know

12. Are there fire extinguishers at the workplace?

☐Yes ☐No.

13. Do you know how to use a fire extinguisher?

☐Yes ☐ No.

14. Have you attended any workshops/training related to emergency management?

☐Yes ☐No

15. How would you rate your current knowledge regarding how to manage emergencies if they should occur? ☐Excellent ☐Good ☐Fair ☐Poor

16. Emergency/Disaster planning is only for administrative staff and heads of departments.

☐ Yes ☐No ☐ Don't know

17. Do you need to know about your organizations written emergency plan?

☐ Yes ☐ No ☐ Don't know

18. Does your organization provides adequate personal protective equipment for staff members?

☐Yes ☐ No ☐ Don't know

19. Does your organization conduct emergency/disaster drills or exercises?

☐Yes ☐No ☐ Don't know

20. Have you participated in emergency preparedness drill in the last 12 months?

☐ Yes ☐ No ☐ Don't know

21. Have you already identified the emergency assembly point in your organization?

☐ Yes ☐ No

22. Do you know the person to report an emergency incident to in your organization?

☐ Yes ☐ No

23. Do you know how to evacuate yourself during an emergency/disaster?

☐Yes ☐ No

24. Do have any comment about emergency preparedness in your organization?

……

……

……

Thank you