

Evaluating Occupational Health and Safety Management in Selected Plastics Manufacturing Organizations in Awka Metropolis Nigeria

^{*1} *Nnadozie Chijioko Nnaji-Ihedinmah,* ² *Kelechi E Ugwu*

¹ *Department of Business Administration, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria*

² *Department of Management Technology, Federal University of Technology, Owerri, Imo State, Nigeria*

Received 31 July 2016, Accepted 1 December 2016

ABSTRACT:

The concept of Occupational Health and Safety Management (OHSM) involves the identification of hazards and risks in the workplace and the definition of the rights, roles and responsibilities of stakeholders in the implementation of control and or preventive measures. The study identifies 5 different classes of hazards to include – chemical, biological, physical, ergonomic and psychosocial hazards. The study also identified effective safety and Health committees and Health and safety promotion, Education and training as key ingredients to effective implementation of OHSM. A survey method was adopted while a structured questionnaire was deployed in the collection of data. The population of the study is 221. Chi-square and descriptive statistics were used in analyzing the data. The results of the study show that the level of awareness of occupational health and safety management among employees in the plastic industry is high. Also, that the level of implementation of occupational health and safety management in the plastics industry is high.

Keywords: *Occupational health and safety, Occupational hazards, Plastics industry, Health and safety management, Health and safety committee*

INTRODUCTION

The development of occupational health and safety can be traced to the 18th century during the industrial revolution which saw an increase in mining and other manufacturing activities (Kalejaiye, 2013). This period was characterized by poor and inhuman treatment meted out to workers essentially driven by the quest for profitability by factory owners. These activities resulted in injuries, diseases and other deformities as a result of poor ventilation, overcrowding, poor sanitary conditions, lack of good food and safe drinking water, poor lighting, employment of under aged children, ignorance of safety precautions and lack of safety

education. The outcome of this was the passing of health and moral act of 1802 by the British Parliament and other subsequent ones that drew attention to these unpleasant hazardous workplace practices. Several other occupational hazards that occurred in Europe helped to re-enforce the call for increased attention to occupational health and safety issues.

In Nigeria, the plastics industry has undergone remarkable transformation from a few companies in the 1960s with a capacity of 100 tons of plastics products to over 3,000 with installed capacity of over 100,000 tons per year (Plastprintpack Nigeria). This rapid growth can

*Corresponding Author, Email: nc.nnajihedinmah@unizik.edu.ng

be attributed in part to advancement in technology used in production which resulted in plastics used in virtually all sectors including automotive industry, health, and household sectors. The major raw material inputs in the industry are sourced from the petrochemical industry. Commercial development of polyvinyl chloride, low density polyethylene, polystyrene and polymethyl methacrylate which are the major raw materials used in production increase in demand as a result of the world war II brought a revolution in the plastics industry. This, in addition to subsequent research in the area has made the industry one of the biggest employers of labour in the world.

Several scholarly researches have shown that employees in the plastics industry are exposed to a myriad of health hazards attributable to the chemicals used in production (Maduka, Ezeonu, Neboh, Shu and Ikekpeazu ,2010; Dematteo, 2011; Essien and Mozie , 2012). Some of these chemicals like monomers and additives have been classified by International agency for Research on Cancer (IARC) as human carcinogen while others are described as endocrine disruptors with varying health implications.

These health concerns call for adequate health and safety management system to be put in place with commitment from employers, individuals and employee unions to ensure that the workplace remains safe and healthy for both employers and employees.

Technological advancement and other factors that enhance industrial activities have also increased the risks employees face resulting in serious health conditions and other fatalities that are now common place in our workplaces thereby leading to deterioration in the health of workers and in worse situations, death, (International Labour Organization (ILO), 2001; 2005a). In developed economies, workplace fatalities have resulted in series of lawsuits and loss of man hours by many workers through absenteeism which could have been channeled to other productive areas. No matter how you look at it, unsafe workplace costs more to the organization than all the efforts at preventing such. Health and Safety Executives (HSE) estimated that about 500 people are killed at work every year and several hundred thousand

more are either injured or suffer work related ill-health. Armstrong (2006), puts the cost of work related injury and illnesses to British employers at £4 billion a year. Over two million people die annually worldwide of work related illnesses with the attendant negative impact on businesses, the economy and the environment (ILO,2002). The situation in Nigeria is not different because as a fast growing economy with increased industrial activities, there is a poor record of occupational diseases as a result of poor reporting. However a survey of occupational diseases in Nigeria shows that the following are very common- conjunctivitis, chronic bronchitis, dermatitis, musculoskeletal disorders (Kalejaiye, 2013). In addition, Nwajei cited by Kalejaiye (2013) reported that employees in the Nigerian manufacturing industry encounter operational problems of noise, toxic, material, heat and stress, radiation trauma and other hazards.

From the foregoing, the issue of occupational health and safety management is pertinent if the organization hopes to remain competitive in the industry. This should be seen by management as a duty of care to the employees of their organizations, which should be pursued with commitment and cooperation. Occupational hazards due to unsafe and unhealthy practices in an unregulated environment have been identified to lead to injuries, and other fatalities and ultimately death. Some workplace illnesses that have been identified by experts include: skin diseases, different kinds of lung diseases, respiratory diseases and other forms of health disorders some of which are permanent and can make the employee incapacitated and unproductive all through life.

It is with this in mind that this researcher seeks to evaluate Occupational Health and Safety Management (OHSM) in preventing hazards in the plastics and packaging Industries in Awka Metropolis in Nigeria.

This study will focus on the following objectives: (1) to determine the level of awareness of occupational health and safety management among employees in the plastics industry. (2) To ascertain the level of implementation of occupational health and safety management in the plastics industry.

RESEARCH METHOD

Conceptual Review

Occupational health and safety is a discipline with a broad scope involving many specialized fields (ILO training module). Example of such disciplines include medicine, physics, chemistry, as well as physiology, ergonomics, toxicology, technology, law, economics and management. Others are industrial hygiene, engineering safety and education.

Alli (2008) defined Occupational health and safety as comprising 'the activities designed to facilitate the coordination and collaboration of workers' and employers' representatives in the promotion of occupational safety and health in the workplace.' The concept according to him defines rights, roles and responsibilities regarding the identification of hazards and risks and the implementation of control or preventive measures. This definition highlights the significant role employers and employees have to play for the success of a health and safety management system.

Adeniyi cited by Kalejaiye (2013) opines that managing health and safety at work is usually a matter of developing health and safety policies, conducting risk assessment which defines the hazards and assessing the risks attached to them, carrying out health and safety audits, and inspections, implementing occupational health programs, managing stress, preventing accidents, measuring health and safety performance, communicating the need for good health and safety practices and organizing health and safety programs. This definition brings to fore the fact that health and safety management involves the early detection of possible hazards by conducting regular risk assessment and health and safety audits and implementing other programs that will forestall their occurrence.

According to Ferris and Buckley, cited by Idubor and Oismoje, (2013), 'Health and safety management is an area that is concerned with ensuring the safety, health and welfare of people engaged in work or employment. It goes further too to protect co-workers, family members, customers, suppliers, nearby communities and other members of the public who are impacted by the workplace environment'. Every occupational health and safety program should, among other things, ensure a safe working

environment for employees of the organization and other stakeholders affected by their activities. The health, safety and welfare of people engaged in work should be a paramount policy objective of every organization. This ensures that the employer has the responsibility of putting in place a good occupational health and safety management system to protect employees from hazards resulting either from 'unsafe work condition' or 'unsafe work behaviors'.

Deubenspeek cited by Kalejaiye (2013) defined occupational health and safety simply as being concerned with the detection, evaluation and control of environmental health and safety hazards associated with working environment. Occupational safety and health management comprises the activities designed to facilitate the coordination and collaboration of workers' representatives in the promotion of occupational safety and health in the workplace (Alli, 2008).

In their broad definition of the subject, ILO cited by Hesapro (2013), submits that OSHM should aim at:

- ✓ the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations;
- ✓ the prevention among workers of leaving work due to health problems caused by their working conditions;
- ✓ the protection of workers in their employment from risks resulting from factors adverse to health;
- ✓ the placing and maintenance of workers in an occupational environment adapted to his or physiological and psychological capabilities;
- ✓ and, the adaptation of work to the person and of each person to their work.

Safety and Health Committees

The establishment and operation of health and safety committees at the enterprise level is essential in maintaining a healthy work environment. According to Cudjoe (2011) 'the overall objective of a safety committee is the promotion of cooperation between employers and employees in investigating, developing and carrying out measures to ensure the health and safety of the employee at work.' A study done by Reilly, Paci and Holl cited by Alli (2008)

reveal that 'establishments with joint consultative committees, where all employees representatives were appointed by unions, had significantly fewer workplace injuries than those where the management alone determined safety and health arrangements' Also Alli submitted that workers' safety delegates, workers' safety and health committees, and joint safety and health committees (or as appropriate, other workers' representatives should, among all be:

- ✓ given adequate information on safety and health matters,
- ✓ enabled to examine factors affecting safety and health,
- ✓ encouraged to propose safety and health measures,
- ✓ consulted when major new safety and health measures are envisaged and before they are carried out,
- ✓ consulted in planning alterations of work processes, work content or organization of work which may have safety or health implications for workers,
- ✓ able to contribute to the decision-making process within the enterprise regarding matters of safety and health,
- ✓ allowed access to all parts of the workplace,
- ✓ able to communicate with workers on safety and health matters during working hours at the workplace,
- ✓ able to contribute to negotiations within the enterprise on OSH matters.

According to the American Society of Safety Engineers (ASSE, 2012), Employee participation in safety and health programs in the organization has been highlighted by several safety management systems including: American National Standards Institute- ANSI, Z10 (ANSI/AIHA, American Industrial Hygiene Association, AIHA, 2005) Occupational Health and Safety Assessment Series –OHSAS 18000 (2007-2008) and Occupational Health and Safety Act 1970 (OSHA). For instance, ANSI, Z10 Health and Safety management systems (2005) recommended that 'effective employee participation includes role in activities such as incident investigations procedure development, health and safety analysis, and all aspects of the planning process.' Michael cited by Cudjoe (2011) states that employees frequently

participate in safety planning through safety committees, often composed of workers from a variety of levels and departments.

Occupational Hazards

'Hazards represent a source of energy with the potential of causing immediate injury to personnel and damage to equipment or structure. This may be in the form of toxic substances such as chemicals, gases or radioactive substances which cause health problems.' Hazards result to hearing loss, liver damage, silicosis, asbestosis, lead poisoning, heart diseases, musculoskeletal disorder, allergies, (Trimpop, and Zimolong, 2011). Health hazards according to Kalejaiye (2013) 'relate to those aspects of the work environment that slowly and cumulatively often irreversibly lead to deterioration of an employee's health.

Hazards can be classified into the following:

- i. Chemical hazards result from harmful chemicals that exert toxic effects on employee mostly in the form of solids, liquids, gases, mists, dusts, fumes, and vapours. Employees can be exposed to them through inhalation (breathing) absorption (through direct contact with the skin) or ingestion (eating or drinking).
- ii. Biological hazards occur in the form of exposure to bacteria, viruses, fungi and other living organisms that enter the body through the skin
- iii. Physical hazards involve excessive noise, vibration, poor illumination and extreme temperature, electromagnetic radiation.
- iv. Ergonomic hazards result from non-application of ergonomic principles like designed machinery, mechanical devices and tools used by workers, improper seating and workstation design, or poor designed work practices.
- v. Psychosocial hazards result from stress and strain in the workplace.

To protect employees against hazards the organization should adopt hazard risk management which includes identification, assessment, risk control and monitoring. Hazards in the work place should be quickly identified and prevented by removing the source, or reducing the effect by ensuring that employees use personal protective equipment (PPE).

Cost of Occupational Hazards

The establishment of an occupational health and safety management systems in the organization, no doubt, may task an organization financially but non-implementation of it may be colossal. Occupational ill-health and hazards come with social, legal and economic implication to both the employees and employers and by extension the country. These costs could be direct or indirect in the form of compensation, lost working hours due to absenteeism, interruption of production, training and re-training, and medical expenses. This is estimated to be about 4 per cent of global yearly gross national product (Alli, 2008).

Health and Safety Promotion, Education and Training

According to Alli (2008), 'Education in the context of occupational safety and health is designed to communicate a combination of knowledge, understanding and skills that will enable managers and workers in an enterprise to recognize risk factors contributing to occupational accidents, injuries and diseases, and be ready and able to prevent these factors occurring in their own work environment. The success of any occupational health and safety management system depends to a large extent on the support and commitment of the entire workforce of an organization. This can better be achieved by building and promoting a safety and health-oriented organizational culture. This can be possible through health and safety promotion, education and training. Education which is all encompassing, will equip employees with both theoretical and practical knowledge necessary to identify potential hazards and adopt good and safe work habits and lifestyles that will promote healthy and safe workplace.

The objective of OSH promotion is to create awareness on a wider scale on the dangers posed by poor hygiene, unsafe work practices and workplace on the health of workers and to highlight their various roles in preventing occupational accidents, injuries and diseases. The promotional activities will include among others an effective system of communication, campaigns using posters and handbills or organizing awards for the best performing and safety conscious work-teams based on verifiable records and institutionalized reporting system.

Training helps workers acquire the necessary skills required to perform their jobs safely. Technology is dynamic and to be efficient in the usage entails that employees undergo regular training on usage of machines used in production. This training may be in-plant or external, formal or informal.

Health and Safety Issues in the Plastics Industry

Plastics have been defines as synthetic polymers that are made up of chains of repeating molecular units called monomers which are building block of polymer (De matteo, 2011) Monomers are produced by petrochemical industries through crude oil distillation at the refineries which are further polymerizes into final products by resin producers. Processing of plastics involves conversion of resins to a soft state through heat and pressure which releases so many chemicals in the process. The methods used include- injection molding, extrusion, blowing molding, calendaring, and compression molding. The major inputs used include, polyvinyl chloride (PVC), Polystyrene (PS) and Acryl nitrite- butadiene styrene (ABS).

According to De matteo, 2011, "the plastics processing work environment is potentially contaminated by residual monomers, polymers, and various additives including plasticizers, stabilizers, pigments/ colorants, flame retardants, activators, lubricants and fillers" Maduka, et al (2010), in their research also revealed a preponderance of bisphenol A (an endocrine disruptor) in the urine of occupationally exposed plastics industry worker. This poses a health hazard as bisphenol A is known to be toxic. Many of these toxins released into the air are carcinogens while others as mentioned above are endocrine disruptors. IAPA, 2007, defined carcinogen as a chemical, physical or biological agent that can cause cancer in humans and animals. Endocrine disruptors interfere or mimic hormone action thereby causing a wide range of health effects in humans (De matteo, 2011).

The following are the principal contaminants released during plastics processing and fabricating

a. Vinyl chloride a resin used for the production of various products such as pipes, tubing, fabrics and auto parts, has been classified by the international Agency for the Research on Cancer (IARC) as human and animal carcinogen.

b. Styrene used in the production of various plastics, resins and vulcanizers is known to be a carcinogen and an endocrine disruptor.

c. Acrylonitrile is used in the production of acrylic and modacrylic resin and rubbers classified as possibly human carcinogens. Also known to increase lymphocyte count, severe liver damage, lung cancer and increased chromosomal aberrations in exposed workers and may have endocrine disrupting effects.

d. Bisphenol A (BPA) is a resin used in lining for most food products and beverages, cans, and as additive in consumer products and the automotive parts. Studies have shown that it has many adverse health effects like miscarriages, ovarian cysts, obesity and endometriosis.

e. Formaldehyde is a major ingredient in resin production and is released during thermal processing. It has been classified by IARC as a human carcinogen.

Employee Attitude to Occupational Health and Safety

Employee behavior is critical to the success of any health and safety program in creating a safe workplace (Schultz, 2004; Idirimanna and Jayawardena, 2011). Literature has identified workplace safety attitude as the tendency for employees to have the disposition to either respond positively or otherwise to safety issues in the workplace. This involves the choices they make as individuals or groups which ultimately becomes the organization's safety culture. Workplace safety to a large extent is determined by employee safety attitudes. This view is supported by Alge, Ballinger, Tangirala and Oakley cited by Ugwu, that attitudes of employees are strong predictors of several work performance factors such as creativity, extra role performance, and managerial effectiveness. Ugwu, also posited that attitude helps employees maintain consistency of thought, feelings and decisions which are in turn influenced by their experiences in their environment.

Safety culture in an organization represents the individual and group values, attitudes, perceptions, and behavior patterns that reflect an organization's commitment to workplace safety (Hughes and Gilmour, 2010). Safety culture in an organization should start from the top and filter down to employees. Management should demonstrate that safety is a priority and

employee welfare cannot be toyed with. This will help employees understand their responsibilities in the process and possibly take ownership of safety throughout the organization. Ochsner and Greenberg cited by Idirimanna and Jayawardena (2011) highlighted some factors affecting the health and safety behavior of industrial workers to include – management cooperation and commitment, the presence of government in ensuring the organizational compliance with worker's right and legal protections, training and access to information offered by unions.

Theoretical Review

This study is anchored on Heinrich's Domino theory of accident causation (1931). The theory states that accidents result from a chain of sequential events which he referred to as 'Dominoes' falling over. He stated that when one of the dominoes falls, it triggers the next one and the next continuously. He proffered advice on how to minimize or eliminate their presence in the sequence and added that by removing a key factor (such as unsafe condition or unsafe act) the start of the chain reaction is prevented. The 'dominoes' were used metaphorically to represent a chain of events that lead to accidents or injury in the workplace. He identified a chain of events or circumstances that ultimately lead to accident/injury in the workplace as follows:

- Social environment and ancestry,
- Fault of person,
- Unsafe act or mechanical or physical hazards (unsafe condition),
- Accident, and
- Injury.

According to the theory accident or injury in the workplace is caused mostly by preventable chain of events principally caused by unsafe acts or unsafe condition in the workplace which can be avoided with the right attitude. This brings to fore the role of employers and employees who must work together to ensure a safe work environment while employees on their part will ensure compliance with safety rules which ensures that potentially risky conditions or attitudes are avoided to prevent accidents.

Empirical Review

Many of the studies reviewed established a relationship between health and safety in the

workplace and some positive outcomes in the organizations studied. Ogbo and Ukpere (2013), in their study of safety adherence model for the Nigerian work environment sampled 111 manufacturing firms in the south-east zone of Nigeria submitted that safety management implementation has an influence both on safety and on the performance of firms. Okoye and Okolie (2014), in an exploratory study of the cost of health and safety performance of building contractors in South East Nigeria, established a correlation between health and safety performance of building contractors and project outcome. Studying the impact of occupational health and safety policies on employee's performance in the Ghana's Timber industry,, Dwomoh, Owusu and Addo (2013), affirmed that organization's investment in health and safety programs has a link with employees' performance. Machabe and Indermun (2013) conducted a study on management perceptions of the occupational health and safety system in a steel manufacturing firm. The authors looked at how the management perceived their roles as managers and how their interpretation of this role influenced occupational health and safety in the workplace. The findings of the study revealed that there is a strong relationship between management perception and safety in the workplace. The study therefore concluded that the human factor can have a huge impact on safety performance within the plant. Bankole and Ibrahim (2012), examined the perceived influence of health education on occupational health of factory workers in food and beverage industry in Lagos State, Nigeria. The study revealed that vulnerability to occupational hazard differed significantly between those factory workers exposed to regular health education and those who were not. The study therefore concluded that there is a significant relationship between health education and occupational health of respondents.

It could be seen from the result that management commitment and attitude of co-workers have strong influence on safety behavior of employees. Inadequate or lack of safety training, medical test to determine the health status of workers are some of the factors responsible for neglect of safety procedures and while Section 'B' was directed to information on the subject under study.

compliance. From the various empirical literature reviewed above, centered mostly on effect of policies, perception of management or health education on health and safety practices. Other areas are safety adherence model and cost of safety on health performance. From available literature, none of the authors focused on evaluating health and safety performance of plastics manufacturing organizations in Awka metropolis Nigeria, thereby creating a gap in knowledge. The present study unlike others seeks to evaluate the level of health and safety practices in the plastics industry especially as the production process involves handling of heavy equipments and dangerous chemicals.

Research Design

The descriptive research design was adopted in this study. Descriptive research is directed at making careful observations and detailed documentation of a phenomenon of interest. These observations must be based on the scientific method (i.e., must be replicable, precise.), and therefore, are more reliable than casual observations by untrained people (Bhattacharjee, 2012).

The geographical coverage of this study is Awka metropolis. The target population is "the entire aggregation of respondents that meet the designated set of criteria" (Burns & Grove 1997). The population of the study is made up of senior staff of the following under listed private companies involved in plastics product manufacturing in Awka Metropolis: Millennium Industries – 82, Finoplastika – 73 and Super Plastic – 66. The sample size for this study is 221.

Primary data sourced for this study were obtained first hand by the researcher from the field. The primary source of data used in this study was generated mainly with the aid of a structured questionnaire administered to employees of the four manufacturing organizations surveyed for this study. The questionnaire was designed using the Likert-scale format on a continuum of 5 to 1, the options are as follows: strongly agree (SA); agree (A); undecided (UD); disagree (D), strongly disagree (SD). The questionnaire was divided into two parts. Section 'A' solicited background information of the respondents,

Validity was achieved by using panel of persons. A copy of the draft questionnaire was

sent along with the topic of the study, objectives of the study, statement of problem and research questions independently to the supervisor and other experts whose inputs on the various aspects of instrument validity were articulated. These inputs were then reviewed and integrated to get the final copy of the questionnaire to ensure that both the content and face validity were obtained.

Reliability relates to the precision and accuracy of the instrument. If used on a similar group of respondents in a similar context, the instrument should yield similar results (Cohen et al., 2000). The test and re-test method was used to test the reliability of the instrument. This was achieved by administering the instrument to the sample of the study and their responses were collected. After an interval the same instrument was also re-administered to the sample and their responses were also collected. The two results were then compared. The reliability test of the questionnaire was done with the aid of SPSS

using Cronbach Alpha formula. It returned a value of 0.801 or 80%

The Cronbach Alpha value was .801 or 80% which is above 70% which is widely accepted by scholars.

RESULTS AND DISCUSSION

Test of Hypotheses

Chi-Square Test

H₀₁: The level of awareness of occupational health and safety management among employees in the plastics industry is low.

The result of the hypothesis test shows that the P value is less than .05 in the table above therefore the null is rejected. We then accept the alternate, that 'the level of awareness of occupational health and safety management among employees in the plastics industry is high (table 1).

H₀₂: The level of implementation of occupational health and safety management in the plastics industry is low.

Table1: Test result of hypothesis one HYP1

	Observed N	Expected N	Residual
3	4	6.4	-2.4
3	1	6.4	-5.4
3	3	6.4	-3.4
3	5	6.4	-1.4
3	5	6.4	-1.4
3	2	6.4	-4.4
3	8	6.4	1.6
4	1	6.4	-5.4
4	2	6.4	-4.4
4	s1	6.4	-5.4
4	1	6.4	-5.4
4	5	6.4	-1.4
4	11	6.4	4.6
5	22	6.4	15.6
5	18	6.4	11.6
5	18	6.4	11.6
5	7	6.4	0.6
5	1	6.4	-5.4
Total	115		

Test statistics

	HYP1
Chi-Square	116.496 ^a
Df	17
Asymp. Sig.	0.000

a. 0 cells (0.0%) have expected frequencies less than 5.

The minimum expected cell frequency is 6.4. SPSS ver. 20

Findings show that the P value is less than 0.05 at 0.000 as shown above we then reject the null and accept the alternate hypothesis showing that, 'the level of implementation of occupational health and safety management in the plastics industry is not high'(table 2).

The analysis above shows that a few of the questions used to test the level of awareness of occupational health and safety management among employees in the plastics industry have high mean values above 4.0 (table 3).

The test of the two formulated hypotheses showed the following result:

- ✓ That the level of awareness of occupational health and safety management among employees in the plastics industry is high.
- ✓ That the level of implementation of occupational health and safety management in the plastics industry is also high.

The findings of this study show that the level of awareness of occupational health and safety management among employees in the plastics industry is high. No initial work done on the level of awareness and implementation of occupational health and safety in the plastics industry in Nigeria was traced. Similar studies by Olutuase, (2014), though the study was done in the construction industry, affirmed that a form of safety management system exist, however stressed that they were poorly organized and characterized by ineffectiveness and poor documentation. Also, Dodo, (2014), while admitting a level of implementation concluded that effective health and safety practices for employees in Nigeria are yet to be fully appreciated and implemented among construction firms.

Table 2: Test result of hypothesis one HYP2

	Observed N	Expected N	Residual
2	1	5.5	-4.5
2	1	5.5	-4.5
3	2	5.5	-3.5
3	5	5.5	-.5
3	1	5.5	-4.5
3	4	5.5	-1.5
3	6	5.5	.5
3	6	5.5	.5
3	3	5.5	-2.5
3	6	5.5	.5
4	3	5.5	-2.5
4	9	5.5	3.5
4	5	5.5	-.5
4	9	5.5	3.5
4	11	5.5	5.5
4	14	5.5	8.5
4	10	5.5	4.5
4	10	5.5	4.5
5	6	5.5	.5
5	2	5.5	-3.5
5	1	5.5	-4.5
Total	115		

Test statistics

	HYP2
Chi-Square	52.817 ^a
Df	20
Asymp. Sig.	0.000

a. 0 cells (0.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 5.5. SPS ver.20

Table 3: Awareness indicator

Items	N	Mean	Std. Deviation	Remarks
Employees are aware and understand their roles in ensuring that hygiene levels are high and safety precautions are taken.	115	4.1130	1.07414	Agree
Employees understand that unsafe work practices are the major causes of occupational hazards in the plastics industry and make effort to protect themselves.	115	4.0174	1.05948	Agree
Both management and employees understand the consequences of unsafe workplace and work hard to ensure that the environment is made safe.	115	4.1304	1.13572	Agree
Supervisors ensure compliance with guidelines on the use of chemicals and other hazardous substances in the workplace.	115	4.4609	1.09454	Agree
Valid N (listwise)	115			

CONCLUSION

The results of this study show that employees know the importance of health and safety in the workplace and have become aware of occupational health and safety management programs and understand that it is aimed at protecting them. Employers also have come to understand that they cannot achieve profitability without taking care of their employees and so have implemented some form of health and safety programs in their organization. That though results show that the levels of awareness and implementation of occupational health and safety are high, there are no sufficient records to show the effect this has on hazards in the workplace. Therefore management should ensure that records of accidents and other health hazards are properly documented.

REFERENCES

- Alli, B. O. (2008). *Fundamental Principles of Occupational Health and Safety*, 2nd ed. International Labour Office, Geneva.
- American Society of safety Engineers (2012). *The Safety Professionals Handbook: Technical Application*, 2nd ed., edited by Joel M Haight, US.
- Armstrong, M. (2006). *A Handbook of Human Resources Management Practice*, 10th ed., London: Kogan Page Limited.
- Bankole, R. B. and Ibrahim, L. O. (2012) Perceived Influence of Health Education on Occupational Health of Factory Workers in Lagos State, Nigeria. *British Journal of Arts and Social Sciences*, 8 (1), pp. 57-65
- Bhattacharjee, A. (2012). *Social Science Research: Principles, Methods, and Practices*, University of South Florida, Scholar Commons.
- Burns, N. and Grove, S. K. (1997). *The Practice of Nursing research, Conduct, Critique and Utilization*, 3rd ed. Philadelphia: Harcourt.
- Cohen, L., Manion, L. and Marrison, K., (2000). *Research Methods in Education*, 5th ed., London: Routledge Falmer.
- Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16, pp. 297-334.
- Cudjoe, S. F. (2011). An Assessment of Occupational Health and Safety Practices on Job Performance at the Tetteh Quarshie Memorial Hospital Mampong-Akuapem, An MSc Thesis Submitted to the Institute of Distance Learning, Kwame Nkrumah University of Science and Technology Ghana.
- Dematteo, R. (2011). Chemical Exposure and Plastics Production: Issues for Women's Health. The National Network on Environments and Women's Health Newsletter December, 2011. Available: www.nnewh.org/images/upload/attach/NNEWH%20Review%20-%20chem%20Exp%20and%20plastics%20production.pdf (February 27, 2015).
- Dodo, M. (2014). The Application of Health and Safety Plan in Nigerian Construction Firm. *Jordan Journal of Civil Engineering*, 8 (1), pp. 81-87.

- Dwomoh, G., Owusu, E. E. and Addo, M. (2013). Impact of Occupational Health and Safety Policies on Employee's Performance in the Ghana's Timber Industry: Evidence from Lumber and Logs Limited. *International Journal of Education and Research*, 1 (12).
- Ezeonu, F. C., Ezeonu, J. N. and Edeogu, O. C. (2005). Occupational Hazards in the Nigerian Cement Workers - Workers' Awareness and Perception. *African Newsletter on Occupational Health and Safety*, 15 (3), December, 2005.
- Essien, V. A. and Mozie, I. (2012). Globalization and Industrial Performance in Nigeria: A Case Study of the Plastics Industry, 1975-2010, Available: [http:// dx.doi.org/10.2139/ssrn.2167266](http://dx.doi.org/10.2139/ssrn.2167266)
- Guidelines on Occupational Safety and Health Management Systems (2001). ILO-OSH 2001 Geneva, International Labour Office.
- Hesapro Reaseach Papers (2013). The Link between Productivity and Health and Safety at Work, an EU Funded Lifelong Program by Hesapro Partners, April 2013.
- Hughes, A. and Gilmour, N. (2010). Attitude and Perceptions of Work Safety among Community Mental Health Workers, *North American Journal of Psychology*, 12 (1).
- Idirinmana, I. S. A. D. and Jayawardena, L. N. A. C. (2011). Factors Affecting the Health and Safety Behavior of Factory Workers, Paper Presented at the 11th Global Conference on Business and Economics, October 15-16, 2011 Manchester Metropolitan University, UK.
- ILO (2002). Work-Related Fatalities Reach 2 Million Annually, Geneva. International Labour Organization.
- ILO (2005a). Number of Work-Related Accidents and Illnesses Continues, to Increase, ILO/ WHO Joint Press Release Published 28th April, 2005.
- ILO (n.d) Training Module, Your Health and Safety at Work. Introduction to Occupational Health and Safety.
- Industrial Accident Prevention Association (2007). Glossary of Occupational Health and Safety Terms.
- International Agency on Research on Cancer (2011) Agents classifies by the IARC Monograph, Volumes 1-102, Lyon, France. Available: <http://monographs.iarc.fr/ENG/classifications/classificationsALPHAorder.pdf>
- Kalejaiye. P. O. (2013). Occupational Health and Safety: Issues, Challenges, and Compensation in Nigeria. *Peak Journal of Public Health and Management*, 1 (2), pp. 16-23.
- Khan, M. M. and Jabbar, M. (2013). Determinants of Employees Performance in Corporate Sector: Case of an Emerging Market. *Business and Management Research*, 2 (3).
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., Devet, H. C. W. and Van der Beek, A. J. (2011). Conceptual Frameworks of Individual Work Performance - A Systematic Review. *Journal of Occupational and Environmental Medicine*, 53 (8).
- Machabe, A. P. and Indermun, V. (2013). Management Perception of the Occupational Health and Safety System in a Steel Manufacturing Firm, *Arabian Journal of Business and Management Review (Nigerian Chapter)*, 1 (11), pp. 25-36.
- Maduka, I. C., Ezeonu, F. C., Neboh, E. E., Shu, E. N. and Ikekpeazu, E. J. (2014). Urinary Bisphenol A Output in Plastics Industry Workers: A Possible Indicator of Occupational Exposure, *Tropical Journal of Medical Research*, 17 (2), pp. 117-120. Available: <http://www.tjmrjournal.org/text.asp?2014/17/2/117/140435> (April 4, 2015).
- Ogbo, A. I. and Ukpere, W. I. (2013). Management of Designed Safety Adherence Model for the Nigerian Work Environment. *Journal of Human Ecology*, 41 (3), pp. 183-191.
- Olutuase, S. O. (2014). A Study of Safety Management in Nigerian Construction Industry. *Journal of Business and Management*, 16 (3), pp. 1-10.
- Osaze, B. E. and Izedonmi, P. F. (2003). Guidelines for Writing Theses and Dissertations for Postgraduate Students in Africa, Streams Communications, Ikeja, Lagos.
- The Plastics and Packaging Sectors in Nigeria, Plastprintpack Nigeria Newsletter, Available: www.ppp-nigeria.com/pppnigeriaevent_ppsector.html. Sourced on 5/2/2015
- Trimpop, R. M. and Zimolong, B. M. (2011). Risk Perception, Safety Policy and Leadership. *Encyclopedia of Occupational Health and Safety*, Edited by Jeanne Mager Stellman. International Labour Organization, Geneva. Available: www.ilo.org/iloenc/part-viii/safety-policy-and-leadership/item/986-risk-perception? (November 1, 2015).
- Ugwu, D. I. (n.d). Employee Knowledge and Attitude Regarding Occupational Hazards in a Large Industry in Enugu State. Available: www.hepran.org/journals (April 4, 2015).