

RELATIONSHIP BETWEEN KNOWLEDGE AND PRACTICE OF OCCUPATIONAL SAFETY MEASURES AMONG WORKERS IN BREWERY COMPANIES IN IBADAN AND IJEBU-ODE METROPOLIS

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Abstract

Human beings engage in one occupation or the other which have some degrees of hazards that predisposes workers to illness and injury. Millions of workers in both developed and developing countries are at risk of exposure to physical, chemical, biological, psychosocial or ergonomic hazards in the workplace. Hence, the need to foster a safe work environment, protect workers and customers is the primary goal of all occupational health and safety practice. This study was carried out using descriptive survey research design and the data was analysed using both descriptive and inferential statistics. The descriptive statistics used were frequency counts, simple percentage and pie chart, while Person Product Moment Correlation and regression were the inferential statistics used. Proportionate and purposive sampling technique were used to select 501 respondents. The result of the study shows that there was no significant relationship between practice of safety measures and knowledge of occupational safety ($r = -0.004$, $p > 0.05$), and between practice of safety measures and knowledge of personal protective equipment among brewery workers in Ibadan and Ijebu-Ode Metropolis ($r = -0.017$, $p > 0.05$). There was significant relationship between practice of safety measures and medical assessment ($r = -0.46$, $p < 0.05$) and between practice of safety measures and policy formulation/ law enforcement ($r = -0.41$, $p < 0.05$). The result of study shows that most brewery workers have knowledge about personal protective device but do not translate the knowledge into actual practice. The study therefore recommended that government should play a major role by workplace rules and provide a system of dissemination and enforcement. Regulations and standards of protective equipment use by the entire labour force should be reviewed continuously for their relevance and adequacy.

Keywords: Knowledge, Safety, Hazards, Personal protective equipment

Introduction

Occupational health and safety practice is a cross disciplinary area concerned with protecting the safety, health and welfare of people engaged in work environment. The goal of occupational health and safety programme is to foster a safe environment. As a secondary effect, it may also protect co-workers family members, employee, customers, suppliers, nearby communities and other members of the public who are impacted by the work place environment. It may involve interaction among many subject areas, including occupational medicine, occupational or industrial hygiene, public health, safety engineering, chemistry and health physics, (Asogwa 2007). Over the years, workers in the breweries

industry are being exposed to different kinds of hazard of varying degrees as they perform or carry out their routine /new work process, due to the complexity of their job (Oluwagbemi 2011).

According to Petez (2010) workplace safety refers to the working environment at a company and encompasses all factors that impact the safety, health and wellbeing of employees. National Institute for occupational safety and health (NIOSH) defined occupational safety as cross-disciplinary area concerned with protecting the safety health and welfare of people engaged in employment , which include fostering a safe and health work environment (NIOSH 2004). A safe system of work and are normally formal and documented, the importance of this is the recognition that most accident are caused by a combination of factors (plant, substances, lack of training or supervision. The adoption of a safe system of work provides integral approach to looking at the work as a whole, starting from analysis of all foreseeable hazards and these brings together all the necessary precautions which include design, physical procedure, training monitoring, procedures and personal protective equipment. (Hughes and Ferrette 2013).

According to International Labour Organization (ILO) (2005), organizational health and safety focuses on the development of specific measures and programmes, aimed at protecting employers in the course of performing their duties to maximize productivity and improve the overall organizational performance. Safety is the state of being “safe” the condition of being protected against physical, biological, mechanical and ergonomic hazard in the work environment or from any other event which could cause death or economic loses (Oluwagbemi 2010).

Brenner (2004) asserted that the ability of employees within an organisation to share knowledge within the system depends on the conditions of their work environment. However, various studies revealed that corporate executives from various industries disclosed that many organisations do not fully leverage their physical work environment to enable them increase collaboration, innovation and improve work effectiveness. Moreso, the quality of comfort derivable from work environment determines the level of satisfaction and productivity of workers. Workers productivity cannot be optimal, if the conditions of work environment are not favorable.

Health and safety training is very important as part of the health and safety culture and it is often a legal requirement for an employee to provide such training should on recruitment, at induction or on being exposed to new or increased risks (ILO 2009). There will be several benefits to the employers if there is good knowledge and practice through sound information and training which will bring a total reduction in accident severity and frequency, injury and ill-health related absence, compensation claims and possibly insurance premium

and thus brings a sound improvement in the health and safety culture of the organization, improve staff morale and retention (Hughes and ferrette 2013).

At every state of production, certain hazards are inherent which expose workers to risks and in these circumstances personal protective equipment that normally should be the last line of defense becomes the only line of defense available to protect workers. Personal protective equipment is designed to protect employees or workers from serious workplace injuries or illness resulting from contact with chemical, radiological, physical, electrical, mechanical or other workplace Hazards (OSHA 2002). Personal protective equipment which include head protection (Helmet), eye and face protection (eye shield, goggles etc) Respiratory protection (face mask) hearing protection (ear muff or ear pluge), hand protection (Utility or Rubber gloves). Body protection (Reflective jacket etc) feet protection (safety shoes or boots) etc may be needed to assure an employee that he is adequately protected from hazard (Health and Public safely 2008).

With the advent of the industrial revolution the number and severity of workplace injuries increased, bringing about the need for changes in providing financial and medical support for the employees with work related injuries. Workers compensation is a legal system through which individual who sustain physical or mental injuries due to their job are compensated for medical cost and some rehabilitation cost, and through which the supervisors of workers of worker who are killed receive compensation for lost financial support (Bodem, 2000).

Generally speaking, three groups of law have come to be recognized in occupational health, namely (i) labour laws (ii) Factory Laws and (iii) Workmen compensation laws (Azuzu 2009). Workmen Compensation Act, 1990 has been replaced by Employee's Compensation Act 2011. This act provides for compensation of employees (or their dependants) in respect of incidents such death, injury or diseases that may arise out of, or in the course of their employment. Labour Act, 1990, which is also being replaced by occupational health and safety Bill (2012), this bill was passed at the senate on Thursday 2nd September 2012, this is to make comprehensive provisions for securing the safety, health and welfare by persons at work. The bill is yet to be signed to law at moment. (Oluwagbemi, 2013). A clear policy for the management of health and safety allows everybody to associate with organization to be aware of its health and safety aims and objectives and how they are to be achieved. For policy to be effective it must be honoured in the spirit as well as the letter. A health and safety policy contributes to business efficiency and continuous improvement throughout the operation. (Hughes and Ferrette 2013).

Work is a means of economic survival as well as a source of satisfaction and happiness for man. Hence every individual of productive age always eager to be engaged in one occupation or the other. However, there is a close relationship between workers health, the work environment and the work condition which can

be positive or negative. The worker's health can be affected by his or her performance and productivity depending on environment disposition, safety precaution and occupation organization (Achal 2000).

Eighty six percent (86%) of productivity problems reside in work environment (Akindele 2009) 25% of all deaths at work, 19% of all major accidents are due to falls from heights (Hughes and Ferrettee 2013). The success of any occupation is measured by the progress made and safety of its works. The need for employees' safety from occupational hazard should be given priority. Every workers needs to be free from all forms of hazards (Asogwa, 2007).

Due to the complexity of jobs in breweries, workers are being exposed to different kinds of hazards at varying degrees as they perform their routine work process. Examples of these injuries are cuts from broken bottles, fractures from falls, burns, scars, or splash from explosion of chemicals, accidental ingestion of chemicals etc. (Report from Safety Department Breweries).

It was observed by the researcher that most of the workers in breweries are aware of occupational safety measures, but they failed to put the knowledge acquired into practice, thus predisposing them to various hazards at work place. It was in the light of this that the researcher aimed to investigate the relationship between knowledge and practice of occupational safety measures among workers in brewery companies in Ibadan and Ijebu-Ode metropolis.

Research Questions

Answers were provided to the following research questions:

1. What is the attitude of brewery workers towards the use of occupational safety measures in Breweries in Ibadan and Ijebu-Ode Metropolis.
2. Do demographic (sex, age, marital status and educational qualification) affect practice of occupational safety among workers in Breweries in Ibadan and Ijebu-Ode Metropolis?

Hypotheses

The following hypotheses were tested:

There will be no significant relationship between knowledge of safety practices and practice of safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis.

1. There will be no significant relationship between knowledge of personal protective equipment and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis.
2. There will be no significant relationship Medical assessment and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis.

3. There will be no significant relationship between policy formation/ law enforcement and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis.

Methodology

The descriptive survey research method was used for this study. The use of this research method was considered appropriate because of its merit, which suit a study of this nature. According to Polit and Hungler (1997), descriptive survey method helps to obtain a first hand or first class information regarding the prevalence, distribution, determinants and interrelationship of variables within a population. It could be used to collect information on people's action, knowledge, awareness, opinions, intention, attitude and values. This was supported by Thomas and Nelson (2001) also stated that descriptive research design helps a researcher in the collection of information, identifying problems, making comparison and carrying out systematic evaluation

The sample for this study was five hundred and one (501) out of the One thousand and one (1001) brewery workers in Ibadan and Ijebu Ode metropolis. A proportionate sample of 50% of the total population was selected from each of the two breweries within the study area. Purposive sampling technique was used to select this 50%. This is illustrated in the table below.

Name of brewery	No of staff	No selected
Nigeria brewery PLC, Ibadan	541	271
Consolidated breweries PLC, Ijebu-Ode	460	230
Total	1001	501

Source: Brewery Companies in Ibadan and Ijebu-Ode

The instrument for this study was a self-developed structured questionnaire designed according to the variables to be tested in the hypotheses. The questionnaire was in five sections A, B, C, D and E. Section A was tagged Knowledge of Occupational Safety Measures Questionnaire (KOSMQ), Section B was tagged Practice of Occupational Safety Measures Questionnaire (POSMQ), section C was tagged Practice of Occupational Safety Questionnaire (POSQ), section D was tagged Medical Assessment of Workers Questionnaire (MAWQ) and section E was tagged Policy Formulation And Law Enforcement Questionnaire (PFLEQ). All the items in the instrument were close ended and were in line with the modified likert type scale, and will be rated as follows: SA -Strongly Agree (4), A -Agree (3), D -Disagree (2) and SD -Strongly Disagree (1).

The reliability of the instrument was determined through test- retest method. The interval between the tests was two weeks, 20 brewery workers who

are not part of the final sample of this study were selected from Lagos state. Pearson Product Moment Correlation Co-efficient (PPMC) was used to determine the reliability co-efficient of the instrument. The instrument yielded a reliability co-efficient of 0.71.

Descriptive statistics of frequency count, percentage and pie chart were used to analyse research question one, regression was used to answer research question two while Pearson Product Moment Correlation Co-efficient (PPMC) was used to test the hypotheses at 0.05 level of significance.

Results and Discussion

Research Question One: What is the attitude of brewery workers towards the use of occupational safety measures in Ibadan and Ijebu-ode Metropolis?

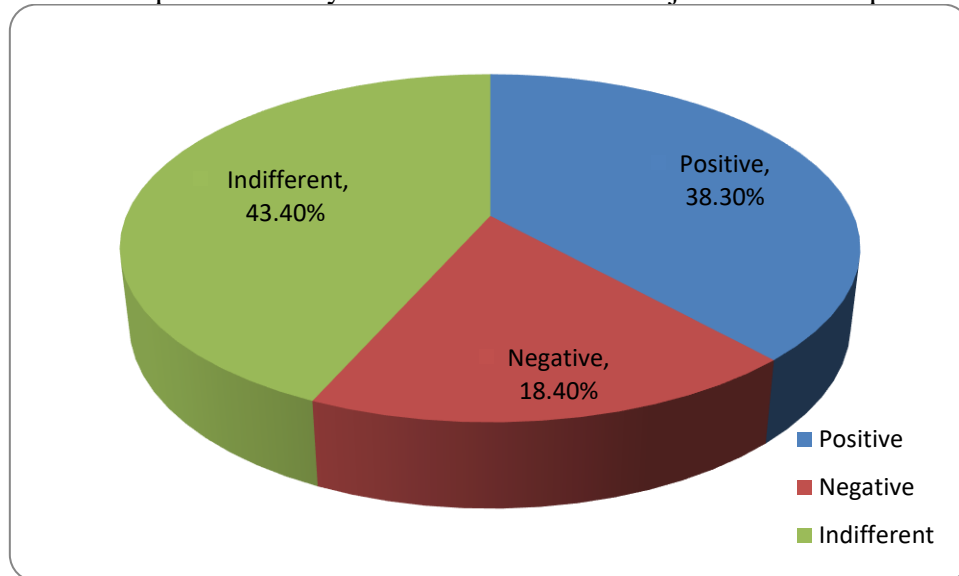


Fig.1 : Pie chart showing attitude of brewery workers towards the use of occupational safety measures in Ibadan and Ijebu-ode Metropolis

Fig. 1 above show the attitude of brewery workers towards the use of occupational safety measures in Ibadan and Ijebu-ode Metropolis. The table shows that 191 (38.3%) had positive attitude, 92 (18.4%) had negative attitude while 217 (43.4%) were indifferent towards the use of occupational safety measures. This shows that majority of brewery workers were indifferent towards the use of occupational safety measures.

Research Question Two: Do demographic variables (sex, age, marital status and educational qualification) affect the practice of occupational safety among brewery workers in Ibadan and Ijebu-ode Metropolis?.

Table 1: Relative contributions of demographic variables to the practice of occupational safety among brewery workers

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	24.591	1.442		17.057	.000
	Educational qualification	.880	.206	.175	4.264	.000
	Age	.641	.215	.142	2.976	.003
	Marital status	.408	.204	.097	2.003	.045
	Sex	1.436	.338	.127	4.244	.000

Table 1 above shows for each demographic variable, the unstandardised regression weight (β), the standardized error of estimate ($SE\beta$), the standardized coefficient, the t-ratio and the level at which the t-ratio is significant. As indicated in the table, all the variables are independently significant. Educational qualification has the greatest effect with a contribution of 17.5% ($\beta=.175$, $t=4.264$, $p<0.005$) followed by age with a contribution of 14.2% ($\beta=.142$, $t=2.976$, $p<0.005$). This is closely followed by sex with 12.7% ($\beta=.127$, $t=4.244$, $p<0.005$) and marital status has the lowest contribution of 9.7% ($\beta=.097$, $t=2.003$, $p>0.05$).

Hypothesis One: There will be no significant relationship between knowledge of occupational safety and practice of safety measures among brewery workers in Ibadan and Ijebu-ode Metropolis.

Table 2: Relationship between knowledge of occupational safety and practice of safety measures

Variable	Mean	SD	N	R	Df	P
Practice of safety measure	1.729	.725	500	0.004	498	.183
Knowledge of occupation safety	1.461	1.186	500			

Table 2, shows that there is no significant relationship between practice of safety measures and knowledge of occupational safety among brewery workers in Ibadan and Ijebu-Ode Metropolis ($r= -0.004$, $p>0.05$). The table also revealed that practice of safety measures has a greater mean of 1.729 and a standard deviation of 0.725 while knowledge of occupational safety has a mean of 1.461 and a

standard deviation of 1.186. This revealed that brewery workers do not allow their knowledge of occupational safety to influence their practice of safety measures. This is in line with Health and Safety Commission (2004) who reported that many workers suffer from accidents and injuries in the course of their jobs, as well as other negative health effects that lead to severe deterioration of their physical and psychological well-being not as a result of lack or inadequate protective devices but as a result of refusal to appropriate their knowledge of safety to practice. This is also supported by Akinyele, (2009) who concluded that there is no significant relationship between knowledge of safety and practice of it among motor cyclist. He further stated that knowledge does not necessarily translate to practice.

Hypothesis Two: There will be no significant relationship between knowledge of personal protective equipment and practice of safety measures among brewery workers in Ibadan and Ijebu-ode Metropolis.

Table 3: Relationship between knowledge of personal protective equipment and practice of safety measures

Variable	Mean	SD	N	R	Df	P
Practice of safety measure	1.729	.725	500	-0.017	498	.072
Knowledge of personal protective equipment	1.417	1.094	500			

The Table above shows that there is no significant relationship between practice of safety measures and knowledge of personal protective equipment among brewery workers in Ibadan and Ijebu-Ode Metropolis ($r = -0.017$, $p > 0.05$). The table also revealed that practice of safety measures has a greater mean of 1.729 and a standard deviation of 0.725 while knowledge of personal protective equipment has a mean of 1.417 and a standard deviation of 1.094. This revealed that brewery workers do not allow their knowledge of personal protective equipment to influence their practice of safety measures. This corroborate the view of Health and Safety Commission (2004) who reported that many workers suffer from accidents and injuries in the course of their jobs, as well as other negative health effects that lead to severe deterioration of their physical and psychological well-being not as a result of lack or inadequate protective devices but as a result of refusal to appropriate their knowledge of safety to practice. This

is also supported by Akinyele, (2009) who concluded that there is no significant relationship between knowledge of safety and practice of it among motor cyclist. He further stated that knowledge does not necessarily translate to practice.

Hypothesis Three: There will be no significant relationship between medical assessment and practice of safety measures among brewery workers in Ibadan and Ijebu-ode Metropolis.

Table 4: Relationship between medical assessment and practice of safety measures

Variable	Mean	SD	N	R	Df	P
Practice of safety measure	1.729	.725	500	0.46	498	.02
Medical assessment	1.641	.926	500			

The table 4 above shows that there is a significant relationship between practice of safety measures and medical assessment among brewery workers in Ibadan and Ijebu-Ode Metropolis ($r = -0.46$, $p < 0.05$). The table also revealed that practice of safety measures has a greater mean of 1.729 and a standard deviation of 0.725 while medical assessment has a mean of 1.641 and a standard deviation of 0.926. This is in agreement with the view of Alexander and Michael 2008, who stated that medical assessment is one of the best ways to motivate workers to comply with safety practices. They stated further that one's a periodic assessment gives a dangerous signal or symptoms, such workers are more liable to adhere to safety rules and regulation.

Hypothesis Four: There will be no significant relationship between policy formulation/law enforcement and practice of safety measures among brewery workers in Ibadan and Ijebu-ode Metropolis

Table 5: Relationship between policy formulation and practice of safety measures

Variable	Mean	SD	N	R	Df	P
Practice of safety measure	1.729	.725	500	0.41	498	.026
Policy formulation	1.628	.944	500			

Table 5 above shows that there is a significant relationship between practice of safety measures and policy formulation/ law enforcement among brewery workers in Ibadan and Ijebu-Ode Metropolis ($r = -0.41$, $p < 0.05$). The table also revealed that practice of safety measures has a greater mean of 1.729 and a standard deviation of 0.725 while medical assessment has a mean of 1.628 and a standard deviation of 0.944. This is in agreement with the view of Cullen and Harari (2005) who stated that; to curb the non-utilization of safety equipment among workers of manufacturing industries, there should be a very strong policy or law against non-utilization. This is also supported by Donald (2007) who maintained that when there is a law or heavy fine against non-utilization of personal protective equipment, workers are liable to comply more to utilization of such equipment.

Conclusion

Based on the findings of the study, the following conclusions were reached. There is no significant relationship between knowledge of safety practices and practice of safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis. There is no significant relationship between knowledge of personal protective equipment and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis. There is a significant relationship between medical assessment and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis. There is a significant relationship between policy formation/law enforcement and practice of occupational safety measures among workers in Breweries in Ibadan and Ijebu-Ode Metropolis. The result of the study shows that most brewery workers have knowledge about personal protective devices but do not translate the knowledge into actual practice.

Based on the findings of this study, these recommendations are hereby suggested.

1. Adequate and proper attention needs to be paid to the work site environment since other factors directly or indirectly are embedded in the work site environment. The employer should make conscious effort to

- introduce periodic health education for the employer on the relationship between their work environment and its proneness to injury and illness.
2. Workers should receive regular training on the use of chemicals and dangerous machines.
 3. Stress management programmes should be organized so that their stress coping will be able to match with their load of work and demands from their numerous customers.
 4. Regulations and standards of protective equipment use by the entire labour force should be reviewed continuously for their relevance and adequacy.
 5. Environmental health personnel should monitor the working environment for potential hazards and identify regularly the problems that could affect the health and safety of workers

References

- Achalu .O. (2000), *Occupational health and safety*, Lagos: Smirch Niger Limited Splendid
- Akinyele, S.T. 2009 The influence of work environment on workers productive. *African Journal of Business management* 4:3, 299-307.
- Alexander, C, J. and Michael C (2008). *Assessing occupational safety and health training* Publications Dissemination 4676 Ohio: National Institute for Occupational Safety and Health 5226-19984 DHHS (NIOSH) PublicationNo. 98-1
- Annual Report (2009). Nigerian breweries, retrieved on 12/01/2014 from <http://www.africanfinancial.com>
- Asogwa, S.E 2007. *A guide to occupational health practice in developing countries*, Enugu; Snaap Press Limited
- Boden, B.P. (2000) Mechanisms of anterior cruciate ligament injury *Pub. Medicine* 23(6): 573-8. www.ncbi.nlm.nih.gov/published/10875418.
- Brenner P. 2004. Workers physical surrounding impact bottom line accounting: Smart pros.com
- Cullen, M. R and R Harari (2005). Occupational health research in developing countries: The experience in ecuador. *International Journal of Occupational and Environmental Health* 1(1): 39-46
- Donald, L (2007) Ways to create positive work environment <http://www.lifeoptimizer.org> Retrived 14/02/2012
- Health and safety education (HSE) 2004. A short guide to personal protective equipments at work regulations
- Hughes and Ferrette 2013. International health and safety at work, published by kara Milne
- Levy, H. and Wegman, D.H (2000). Occupational health: recognizing and preventing work related diseases and injury. (4theds). In H. Levy (Ed.) Occupational and environmental medicine Delphia: Lippincott Williams and Witkins.
- Mc Cunney, R.J. (2001). Opportunities and challenges in leading a professional organizations: A recent presidents perspective *Occupational and Enviromental Medicine* 43 (7): 596-600

- Moronkola, O.A and F.A Okanlawon (2003). Fundamentals of public and community health education. Ibadan: Royal people (Nigeria) University of Ibadan press pg 34-35.
- National Institute of Occupational Safety and Health (2004). Preventing occupational exposure to Antineoplastic and other hazardous drugs in health care settings. Centres for Diseases Control and Prevention (CDC) USA. www.cdc.gov/niosh/doc/2004-165
- NIOSH, (1999). Stress at work U.S National Institute for Occupational Safety and Health. DHHS Publication Number 99-101.
- Occupational safety and health administrator (OSHA) (2002). Personal protective equipment from www.osha.gov
- Occupational Safety and Health Administration, (2005). U.S. department of labor directorate of evaluation and analysis office of statistical analysis OSHA 3245 - 01R
- Oluwagbemi, B.F (2010). Safety legislation and regulation in the work place Ibadan: Vertex Media Limited
- Oluwagbemi, B.F. (2011). Themes and issues in occupational health and safety. *Journal of Occupational Health and Safety*. Ibadan: Vertex Media Publisher Limited.
- Oluwagbemi, B.F (2013). Basic occupational health and safety third edition, Ibadan: Vertex Media Limited.
- Perez, W. (2010) Extending our investment higher education access for undocumented students diversity and democracy, 13 (1), 7-9
- The Occupational Health Advisory Committee (OHAC), (1988). Report and recommendations on improving access to occupational health support. Retrieved 12/ 06 2013 from www.hazards.org
- World Health Organization, (2004). Global burden of disease and ten causes of death. WHO report, Geneva. Retrived 16 July 2012 http://www.who.int/occupational_health/en
- World Health Organization, (2005). Basic occupational health service. Institute of occupational health Helsinki Report. Retrived 16 July 2013 http://www.who.int/occupational_health/en
- World Health Organization (2009). WHO/UNICEF coverage estimates for 1980-2007. Retrieved 21 May 2013 from: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tswucoveredtp3.htm