



Correlates of Occupational Health Hazards Among Workers in Construction Companies in Rivers West Senatorial District, Rivers State, Nigeria

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ABSTRACT

This study investigated the correlates of occupational health hazards among workers in construction companies in Rivers West Senatorial District of Rivers State, Nigeria. The descriptive research design was adopted for the study with a study population which consisted of all construction companies that are primarily engaged in the construction of roads, bridges, culverts and drainages in the district. The sample size for this study was five hundred (500) which was determined using Epi-info 7. The Simple random sampling technique was used to draw the sample size for this study. The instrument for data collection was a structured questionnaire titled 'Questionnaire on Correlates of Occupational Health Hazards among Workers in Construction Companies' (QCOHHAWCC) which was developed by the researcher. Data was collected by administering the questionnaire to the respondents directly and statistical analysis was carried out using the linear regression model at 0.05 level of significance. The result showed that the correlates of occupational health hazards among the respondents were workplace control ($r = 0.351$; $r^2 = 0.123$; $p < 0.05$); availability of safety equipment ($r = 0.548$; $r^2 = 0.301$; $p < 0.05$) and attitude of workers towards hazard control ($r = 0.566$; $r^2 = 0.320$; $p < 0.05$). It was recommended among others that, government, through its agencies should monitor construction companies to ensure that workers and management maintain positive attitude towards occupational health hazards control.

Keywords: Occupational Health Hazards, Construction Companies

INTRODUCTION

Every occupation including construction has its inherent hazards but the intensity of such hazards could be correlated with certain factors which either mitigate or aggravate the exposure of the workers to such hazards. According to Anuradha et al. (2014), occupational health hazards are related to certain conditions including physical factors such as temperature, humidity, noise, light, chemical agents in the form of vapours, fumes, droplets, gases; and unsafe and unprotected machines and technical equipment responsible for causing health challenges. Globally report by the International Labour Organization (2014) showed that, 2.3 million deaths every year can be attributed to occupational injury or work-related diseases, and many more millions suffer from non-fatal work-related injury and illness. Statistics has shown that every year more than 1,000 workers are killed and over 800,000 workers were injured; others suffer ill-health, such as musculoskeletal disorders, dermatitis or asbestosis in Europe (Stocks et al., 2010). This figure could be exceeded in Rivers West Senatorial District since Europe is more advance scientifically, technologically and educationally.

Occupational hazards exposure could be linked to several factors and has become an important health concern in many construction companies, one of which is the use of new technology in construction

companies which has added to occupational health hazards and challenges. George (2020) opined that, rapid technological progress and industrial growth had led to crowded, unsanitary working and living conditions, with a corresponding rise in the number of accidents and deaths caused by the new machinery and exposure to toxic materials. These hazards could have potentials for causing occupational diseases and illnesses among workers in construction companies. According to Squidlord (2020) construction companies are associated with high rate of employment generation; they build roads, bridges and houses for public and private owners. It therefore implies that for any society to meet the standard of modern construction development in terms of buildings, roads and bridges among others, the services of Construction Company are expedient.

Correlates of occupational health hazards are observable conditions that have the tendency of resulting to unwanted incidents such as accidents, diseases, death or incapacitation in work environment (Medical Dictionary, 2009). Studies have shown that several factors make the work environment unsafe for effective operation by workers and this has great consequences on workers' health, the work environment and level of production. Such predictors may include: workplace control, availability of safety equipment and workers' attitude towards safety. Workplace controls involve limiting the time that workers are exposed to work through job rotation, task modifications and increased hazard awareness orientation (Bauer & Babich, 2017). According to Safeopedia (2017), the importance attached to safe working environment makes it essential that workers be provided with adequate and appropriate quantity and quality of safety equipment. Safety equipment are protective devices such as hand gloves, coverall, fire extinguisher that is used to protect workers to avoid injuries, casualties, life threatening situations while carrying out duties.

Safety equipment such as hard hats, foot gear and coveralls and welding mask are considered safety equipment in construction operations. All these types of safety equipment fall under the Personal Protective Equipment (PPE) category. It is in realization of the need to protect workers and the occupational environment against accident and other hazardous conditions that makes the provision of safety equipment necessary in construction companies. Thus, the Occupational Health and Safety Act (OSHA, 2007) require all employers to provide a safe working environment to employees. Such safe working environment includes provision of safety measures such as provision of safety equipment.

In line with this, Pralshar and Bansal (2012) opined that occupational safety system should be designed to protect the individual worker from accidents, reduce the severity of injury in case of accident and prevent occupational disease by making adequate and appropriate safety equipment such as personal protective equipment, fire extinguisher, safety tags and signs available in the workplace. Although, the availability of safety equipment does not guarantee its utilization but it is a bold step towards its utilization. According to Hale and Ytehus (2004), availability of safety equipment are those provisions that ensures that appropriate quantity and quality of safety devices are made to reach the user (worker) at the required time for the appropriate intended safety purpose. In most cases, it is the responsibility of the management to ensure that safety equipment is available to workers. Safety equipment when utilized protects workers against hazards that have the potential of causing injuries, incapacitation, permanent impairment and death. Its utilization also protects the work environment against incidents such as fire outbreak and spread of diseases. These conditions could lead to death, loss of man hour and could add financial burden on employer. Availability of safety equipment could save workers and employers from these conditions. Studies including that of Carmichael (2015) have shown that overwork and the resulting stress due to poor workplace controls have led to various types of occupational health problems, including impaired sleep, depression, heavy drinking, diabetes, impaired memory, and heart diseases. These phenomena could increase absenteeism, turnover, and rising health insurance costs of the company.

Attitude of workers in the construction companies have been implicated to influence occupational hazards. Safeopedia (2018) defined workplace safety attitudes as the tendency to respond positively or negatively towards a safety goal, idea, plan, procedure, prevention or situation. This could positively or negatively influence management's and or employee's choice of actions and response to challenges, incentives and rewards in the workplace. Hale and Ytehus (2004) opined that it is the attitude of the

management of many companies not to provide and enforce procedures that could lead to positive attitude by their employees and as such, employee resort to “do as you like” attitude. Asogwa (2015) attributed most of the practices that have increased occupational health hazards in occupational environment to poor safety attitude of workers of which workers in the construction company may not be exceptional. With new technologies in workplace especially in construction companies, workers’ level of education could have influence on their attitude to occupational hazard and safety. With increasing urbanization and industrialization, more complex construction works which requires the use of sophisticated devices and advanced technology which in turn, requires operational expertise and experience becomes manifest. Consequently, this has become a viable source of occupational health hazards with significant influence on the health of the workers (Parks, 2015). Education improves workers’ awareness, alter their attitude and improve occupational safety which in turn impart on the level of hazard. Leslie (2010) opined that educating workers, training them, and using written plans to help them understand how to avoid accidental exposure to health hazards is imperative in the workplace of which construction companies are inclusive.

Minimizing or eliminating occupational health hazards in construction companies through effective work practice controls could protect workers against associated health challenges and this could improve production. In line with this, Moses (2016) posited that company workers are constantly exposed to different kinds of occupational health hazards ranging from construction, exploration, exploitation and even exportation companies especially in developing countries where implementation of occupational safety control principles remains a big challenge. Consequently, thousands of construction company workers around the world suffer different degrees of injuries, incapacitations and other human and material losses due to occupational health hazards (Mroz, 2013). Based on the foregoing, this study investigated the correlates of occupational health hazards among workers in construction companies in Rivers West Senatorial District of Rivers State, Nigeria.

Research questions

The study provided answers to the following research questions:

1. What is the relationship between workplace control and predictors of occupational health hazards among workers in construction companies in Rivers West Senatorial District?
2. What is the relationship between availability of safety equipment and predictors of occupational health hazards among workers in construction companies in Rivers West Senatorial District?
3. What is the relationship between workers’ attitude and predictors of occupational health hazards among workers in construction companies in Rivers West Senatorial District?

Hypotheses

The following null hypotheses postulated were tested at 0.05 level of significance:

1. There is no significant relationship between workplace controls and predictor of occupational health hazards among workers in construction companies in Rivers West Senatorial District
2. There is no significant relationship between availability of safety equipment and predictor of occupational health hazards among construction workers in construction companies in Rivers West Senatorial District.
3. There is no significant relationship between workers’ attitude and predictor of occupational health hazards workers in construction companies in Rivers West Senatorial District.

METHODOLOGY

The descriptive research design was adopted for the study with a study population which consisted of all construction companies that are primarily engaged in the construction of roads, bridges, culverts and drainages in the district. The sample size for this study was five hundred (500) which was determined using Epi-info 7. The Simple random sampling technique was used to draw the sample size for this study. The technique is applied where there is a subset of a statistical population in which each member of the subset has an equal probability of being chosen (Investopedia, 2017). The choice of the use of this

technique by the researcher was to ensure the elimination of error of classification and also, because it is relatively easy to interpret. The instrument for data collection was a structured questionnaire titled ‘Questionnaire on Correlates of Occupational Health Hazards among Workers in Construction Companies’ (QCOHHAWCC) which was developed by the researcher. QCOHHAWCC consisted of 80 items on a four-point scale rating of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) on which the numerical value of 4, 3, 2, 1 were respectively assigned. Data was collected by administering the questionnaire to the respondents directly and statistical analysis was carried out using the linear regression model at 0.05 level of significance.

RESULTS:

The results are presented below in Tables 1 -3:

Table 1: Simple linear regression analysis on relationship between workplace control and occupational hazards among workers in construction companies

Model	R	R-square	Adjusted R square	Std Error of the Estimate	p-value	Decision
1	.351	.123	.121	.306	.000	Significant

***Significant**

Table 1 showed that workplace control contributed 12.3% of the variance in occupational hazards among workers in construction companies ($r^2 = 0.123$). In addition, the result of the study established a moderate and significant relationship between workplace control and occupational hazards among workers ($r = 0.351$; $p < 0.05$). Thus, the null hypothesis which stated that there is no significant relationship between workplace control and occupational hazards among workers in construction companies in Rivers West Senatorial District was rejected.

Table 2: Simple linear regression analysis on relationship between availability of safety equipment and occupational hazards among workers in construction companies

Model	R	R-square	Adjusted R square	Std Error of the Estimate	p-value	Decision
1	.548	.301	.299	.273	.000	Significant

***Significant**

Table 2 showed that availability of safety equipment contributed to 30.1% of the variance in occupational hazards among workers in construction companies ($r^2 = 0.301$). Consequently, the result of the study established a moderate and significant relationship between availability of safety equipment and occupational hazards ($r = 0.548$; $p < 0.05$). Thus, the null hypothesis which stated that there is no significant relationship between availability of safety equipment and occupational hazards among workers in construction companies in Rivers West Senatorial District was rejected.

Table 3: Simple linear regression analysis on relationship between attitude of workers towards hazards control and occupational hazards among workers in construction companies in Rivers West Senatorial District

Model	R	R-square	Adjusted R square	Std Error of the Estimate	p-value	Decision
1	.566	.320	.319	.269	.000	Significant

***Significant**

Table 3 showed that the attitude of workers towards hazards control contributed 32.0% of the variance in occupational hazards among workers in construction companies ($r^2 = 0.320$). Also, the result of the study established a moderate and significant relationship between the two variables ($r = 0.566$; $p < 0.05$). Therefore, the null hypothesis which stated that there is no significant relationship between the attitude of

workers towards hazards control and occupational hazards among workers in construction companies in Rivers West Senatorial District was rejected.

DISCUSSION OF FINDINGS

The findings of the study in Table 1 showed that work place control has a significant correlation with occupational health hazards among workers in construction companies in Rivers West Senatorial District, Rivers State. This could be attributed to the fact that adherence to safety rules, safety training and orientation, uninterrupted communication flow as well as prompt investigation of incidents of health hazards at workplace are some of the strategies that ensures effective good workplace procedure but are not adequately implemented as a result of poor company's policy on safety. The finding is in keeping with the finding of Haslinda, et al. (2015) that employers' commitment towards implementation of Occupational Safety and Health (OSH) policies positively correlates workers compliance to safety measures. The finding is also in keeping with the finding of Olufemi et al. (2016) that ensuring effective implementation of workplace controls minimizes occupational health hazards among workers. This finding is also in keeping with that of Ofonime and Oluseyi (2016) which showed that training, seminar and workshops improve workers' adherence to occupational health policies. Furthermore, the finding is in keeping with that of Turner et al. (2015) that occupational health hazards among workers are caused by a sequence of unsafe acts and unsafe conditions in the workplace. The similarities in findings is not surprising as management of most construction companies rarely invest quality time in ensuring that workers adhere strictly to safety rules. Also, safety training and retraining opportunities and regular abatement of potential hazards are rarely carried out by construction companies.

The finding of the study is however at variance with that of Shama (2009) which showed that the main barriers to adhering to workplace control as regards to safety measures were interference with job performance, comfort issues in utilizing PPE and lack of workers willingness to engage in safety training especially when financial remunerations are not attached. The study concluded that compliance to workplace control is highly influenced by individual workers and could not be blamed on management in its entirety. This variation in findings could be as attributed to difference in study group, level of safety commitment of the company as well as the attitude of the company's management towards occupational health and safety.

The finding of this study in Table three showed a moderate and significant relationship between workers attitude and predictor of occupational hazard among workers in construction companies in Rivers West Senatorial District, Rivers State. This is not surprising because there was inadequate safety equipment, poor implementation of safety measures and ineffective workplace control by management and this could have influenced their attitude towards occupational health hazards. This finding is in keeping with the findings of Umeokafor and Umeadi (2012) who opined that workers' attitude towards occupational health hazards in workplaces are highly influenced by the policy and implementation strategy of management. The finding is also in keeping with that of Nzuve (2012). Nzuve (2012) showed that workers' attitude towards compliance to safety rules is to a high extent, responsible for occupational health hazards and illness in the workplace. The similarity in the findings could be because of management's inability to provide policies that will shape the attitude of workers towards preventing the occurrence of occupational health hazards and its consequential effect. The finding of this study is however in variance with that of Murphy, Bond, Beaton, Murphy and Johnson (2002) that showed that lifestyle positively correlates workers' attitude towards safety compliance in the workplace. Murphy et al (2002) further opined that workers lifestyle increase the potency of risk factor and not necessarily management inability to provide needed safety environment. This variance could be attributed to the difference in the study location and study population.

CONCLUSION

Based on the findings of the study, it was concluded that, the correlates of occupational health hazards among workers in construction companies in Rivers West Senatorial District of Rivers State workplace control, availability of safety equipment and workers' attitude.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. Government, through its agencies should monitor construction companies to ensure that workers and management maintain positive attitude towards occupational health hazards control.
2. Management should improve workplace control by ensuring that workers are well abreast of the company's position on its safety policies and the consequential result of defaulting should be clearly spelt out to them. This could be achieved through seminars, workshops and conferences.
3. Management should provide adequate quantity and quality of safety equipment such as personal protective equipment, fire extinguisher, signs and tags, sewage abatement facilities to forestall the occurrence of occupational health hazards.

REFERENCES

- Anuradha, C., Tanu, A., Jugal, K., Tor, E. D., & Gopal, K. I. (2014). Occupational hazard exposure and general health profile of welders in rural Delhi. *Indian Journal of Occupational and Environmental Medicine*, 18(1), 21-26.
- Asogwa, S. E. (2015). *A Guideline to Occupational and Health Practices in Developing Countries*. Snap Press Limited.
- Bauer, E.R., & Babich, D.R. (2017). Administrative controls for reducing worker noise exposures from <https://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/acfrw.pdf>.
- Carmichael, S. G. (2015). The Research is clear: Long hours backfire for people and for companies. <https://hbr.org/2015/08/the-research-is-clear-long-hours-backfire-for-people-and-for-companies>.
- George, K. (2020). *Occupational disease*. <https://www.britannica.com/science/occupational-disease>.
- Hale, A., & Ytehus, I. (2004). Changing requirements for the safety profession: Roles and task. *Journal of Occupational Health and Safety*, 2(4), 21-32.
- Haslinda, A. S. M., Wijayanuddin, A., Kamarizan K., Saharudin, H., Mimi, H. H., Norasikin, O., Adnan, R., & Zaki, Y. Z. (2015). Survey on employers' commitment towards OSH and its implementation in the metalworking industry. <http://www.niosh.com.my/images/Journal/2015/CONTENT-JOSH-JUNE-2015-pg-116.pdf>
- International Labour Organization (2014). *Safety and health at work: A vision for sustainable prevention*. ILO.
- Leslie C. (2010). Engineering work practice and administrative controls elements for safety. Retrieved from <https://www.dentistryiq.com/articles/2010/03/engineering-work-practice-and-administrative-controls-elements-for-safety.html>.
- Medical Dictionary (2009). *Definition of predictors*. <https://medical-dictionary.thefreedictionary.com/predictors>.
- Moses, A (2016). Occupational Health Hazards of Environmental Health Practices in Semi-Urban Communities in Ikono Local Government Area of Akwa-Ibom State. *Journal of Environmental Health*, 2(1), 13-17.
- Mroz, J. H (2013). *Safety in Everyday Living*. Iowa: WMC Brown Company and Publishing Limited.
- Murphy, S. A., Bond, G. E., Beaton, R. D., Murphy, J. & Johnson, L. C. (2002). Lifestyle practices and occupational stressors as predictors of health outcomes in urban firefighters. *Journal of the National Institute for Occupational Safety and Health*, 9(4), 311-327.
- Nwankwo, O. C. (2013). *A practical guide to research writing*. University of Port Harcourt Press.

- Nworgu, B. G. (2006). *Educational research: Basic issues and methodology* (2nd ed). University Trust Press.
- Nzuve, S. N. M. (2012). The extent of compliance with occupational safety and health regulations at registered workplaces in Nairobi. *International Journal of Business, Humanities and Technology*, 2(2), 115-120.
- Occupational Safety and Health Act OSHA (2007). Retrieved from 23/3/2020 <https://www.ilo.org/dyn/natlex/docs/SERIAL/78264/83534/F789589155/KEN78264.pdf>.
- Ofonime, E. J & Oluseyi, O. M (2016). Knowledge and use of personal protective equipment among auto-technicians in Uyo, Nigeria. *British Journal of Education; Society and Behavioural Science*, 15 (1), 1-8.
- Olufemi, O. A., Ayobami, E. A., Titilayo, F. A., Mathew, K. E., Abiodun, T. A., & Bukola, F. P. (2016). *Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers*. [https:// www.ncbi.nlm.nih.gov/pmc/ articles/PMC4744628/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4744628/).
- Parks, K. (2015). *Prevention and Social Medicine* (20th ed). Banasidas Bhanot Publishing Limited.
- Safeopedia (2019). *Ergonomic hazards*. <https://www.safeopedia.com/definition/317/ergonomic-hazards>.
- Shama, M. E. (2009). Carried out a study on perceptions and practices regarding occupational hazards and safety measures among printing workers. *Egyptian Journal of Occupational Medicine*, 33(2), 155-174.
- Squidlord, L. L. C. (2020). What are the benefits of a construction company? <https://www.quora.com/What-are-the-benefits-of-a-construction-company>.
- Stocks, S.J., McNamee, R., Carder, M. & Agius, R.M. (2010). The incidence of medically reported work-related ill health in the UK construction industry. *Occupation, Environment and Medicine*, 67(8), 574-586.
- Turner, N., Tucker, S., & Kelloway, E. K. (2015). Prevalence and demographic differences in micro-accidents and safety behaviors among young workers in Canada. *Journal of Safety Research*, 53, 39-43.
- Umeokafor, N. & Umeadi, B. (2012). Compliance with occupational safety and health regulations: A review of Nigeria's construction industry. <https://www.researchgatenet/publication/261711939>