



Occupational Health Hazards Among Workers In Construction Companies In Rivers West Senatorial District, 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 mean and standard deviation. Result of the analysis showed that workers in construction companies were exposed to biological hazards, physical hazards, chemical hazards and ergonomic hazards. The finding also showed that workers were not exposed to psychosocial hazards. It was concluded that, just like every other occupation, hazards are inevitable on construction sites. Recommendation made among others was that, the construction company should ensure that the safety team live up to their expectation of identifying and preventing hazards timely by getting a daily report from them.

Keywords: Construction, Hazards, Health Occupation, Workers

INTRODUCTION

A healthy workplace revolves around competent, active, dynamic and healthy workforce and this has proved to be a great asset to any enterprise including construction companies. Construction companies are organizations created and operated to construct a wide variety of buildings, development, houses, pavement, roads, bridges and other types of constructions (Harmonious, 2016). Construction companies are business enterprises that pool a variety of resources together in order to assemble all forms of structures such as building, roads and bridges in a streamlined and thorough process (Educalingo, 2020). Construction companies are usually large-scale multitasking agencies that incorporate a plethora of human capital and machines. Such human capital may include skilled workers, unskilled workers, professionals, degree holders, non-degree holders with each category being offered jobs and positions to carry out a specified task.

Skilled workers typically focus on a specific trade such as brickwork, carpentry, masonry or welding because usually, they have completed formal training or an apprentice programme. Unskilled workers are hired as labourers on construction sites to operate equipment and provide the physical labor needed. Professionals may be part of sales and marketing or other jobs that are part of every company such as advertising, human resources, and accounting. Workers with degree may be engaged as architects, engineers, project managers, or site managers while workers without degree or those with associate degrees or certifications may be engaged as design technicians or assistants, site supervisors, customer relations or service representatives, materials coordinators, or similar positions. To achieve

set goals, construction companies therefore engage different categories of workers to manipulate different types of construction equipment under different types of work environment. 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 is expedient.

The use of different types of chemicals such as cement, bitumen, diesel, paints and petrol and other gaseous substances are common features among construction companies. Further, depending on the type of construction to be done, workers could be required to work on high altitude, underground or on the surface of the earth. The probability that these conditions could generate occupational health hazards is high. Workers in construction companies are long recognized as being arduous and liable to injuries. According to Snashall (2005) construction is a dangerous industry which has accounted for 32% of fatalities to workers in Great Britain between the years 2002-2003. Likewise, in the United States, the industry employs 5 to 6 per cent of the labour force but has 15% of the fatal injuries, and well over 9% of all workdays lost to injuries (Goldenhar, Moran & Colligan, 2001). Therefore, since health is generally accepted as wealth, primal responsibility to create a safe occupational environment to improve workers' health becomes imperative. Achieving a healthy workforce is essential in every organization because workers' health positively correlate their level of production.

It is pertinent to acknowledge that there are inherent health hazards in every occupation including construction companies. Occupational health hazards are the potential risks to life or functioning of a worker that is associated with the occupation or work environment which the workers are exposed to (Landsbergis, 2003). According to Hasle and Limborg (2006), occupational hazard is a source or situation with a potential for harm in terms of injury or ill health, damage to property, damage to the workplace environment, or a combination of these. Occupational health hazard among workers in construction companies therefore signifies both short-term and long-term risks associated with the workplace environment. Work environment connotes the surrounding conditions in which an employee operates (Business Dictionary, 2019). Construction company work environment therefore refer to the surrounding conditions in which workers in construction companies operate. It is important to note that most work environments are characterized by the presence of hazards.

Anuradha, Tanu, Jugal, Tor and Gopal (2014) opined that occupational health hazards are related to physical conditions; and these hazardous physical factors are 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. The use of new technology in construction companies 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 in Rivers West Senatorial District, Rivers State.

In line with this, World Health Organization (WHO) (2001) warned that when work is associated with health hazards, it may cause occupational diseases; it becomes one of the multiple causes of other diseases or may aggravate existing ill-health of non-occupational origin. George (2020) defined occupational disease as any illness associated with a particular occupation or industry. George emphasized that diseases result from a variety of biological, chemical, physical, and psychological factors that are present in the work environment or are otherwise encountered in the course of work. Nerija and Audrius (2012) opined that occupational disease is any chronic ailment that occurs as a result of work or occupational activity. The main health problems associated with the construction industry are: musculoskeletal disorders, hearing loss; vibration, skin diseases; respiratory diseases such as silicosis, asbestosis; cancer and psychosocial health problems among others.

Consequently, this has resulted to several degrees of health challenges and death. For instance, altogether in Europe, every year more than 1,000 workers are killed and over 800,000 workers are injured; others suffer ill-health, such as musculoskeletal disorders, dermatitis or asbestosis (Stocks, McNamee, Carder & Agius, 2010). This figure could be exceeded in Rivers West Senatorial District since Europe is more advance scientifically, technologically and educationally. This could impact positively on their response to issues relating to occupational health hazards. Globally, 2.3 million

deaths a year can be attributed to occupational injury or work-related diseases, and many more millions suffer from non-fatal work-related injury and illness (International Labour Organization, 2014). Occupational injury, illness, and workplace fatalities are associated with occupational health hazards and are important health concerns in any construction company. According to WHO (2001), potential health hazards among workers include physical hazards, chemical hazards, psychosocial hazards, biological hazards and ergonomic hazards.

Occupational accidents and injuries in workplaces have become a thing of concern to the management of many organizations. Without doubt, many researchers have come up with different strategies and measures to curb and abate these occupational health hazards, yet to no avail. Many companies, especially construction companies in Rivers West Senatorial District, Rivers State, are still experiencing occupational accidents and diseases among their workers; and this scourge has increased cost in terms of human suffering and economic burden continues to be significant (Eyayo, 2014). The National Institute of Occupational Safety and Health (NIOSH) has estimated that 500 workers die each year due to occupational related illnesses (Oginyi, Mbam, Abojei & James, 2017). Indeed, this menace has increased workers' pains, rate of casual leave, hospitalization of workers, increased idle time and has sometimes resulted to incapacitation and even death. Degeneration of workers' health has impacted negatively on their socio-psychological status even after exiting the company. Effect of occupational health hazards on construction workers has increased management's overhead cost on treatment and compensation. It has also threatened the corporate image of the company. Consequently, the anticipated level of production is reduced, and this negates national development. It is worth nothing that before any accident occurs in any occupational setting, there was a hazard that was ignored; and such hazards may not be attended to if is not known. It is therefore important to carry out this study to highlight such occupational hazard among workers in construction companies in Rivers West Senatorial District.

Research questions

The study was guided by the following research questions:

1. What are the physical hazards among workers in construction companies in Rivers West Senatorial District?
2. What are the chemical hazards among workers in construction companies in Rivers West Senatorial District?
3. What are the psychosocial hazards among workers in construction companies in Rivers West Senatorial District?
4. What are the biological hazards among workers in construction companies in Rivers West Senatorial District?
5. What are the ergonomic hazards among 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 Occupational Health Hazards among Workers in Construction Companies' (QOHAWCC) which was developed by the researcher. It was responded 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 of the study are shown below:

Table 1: Descriptive Analysis on physical hazards among workers in construction Companies in Rivers West Senatorial District

SN	Items	Mean	Std. Deviation	Decision
1	workers in construction companies sustain injuries such as cut, puncture and bruises while working	3.15	.40	PH
2	workers in construction companies are prone to falls which can result in dislocation and fracture	2.49	1.62	NPH
3	exposure to dust, heat and excessive brightness of light during work can result to physical deformation such as blindness	2.37	.75	NPH
4	poor arrangement of tools after work can result to injury to workers	3.16	.39	PH
5	poor handling of tools results to accident which may result to injury	3.83	.41	PH
6	workers may suffer from health challenges as a result of overload	3.05	.54	PH
Grand Mean and Std on Physical Hazards		2.97	.58	PH

Note: PH = Physical Hazard, NPH= Non Physical Hazards

Table 1 showed a grand mean of 2.97. The result showed that the grand mean is greater than the criterion mean of 2.5. This showed that physical hazard is one of the occupational health hazards among workers in construction companies in Rivers West Senatorial District.

Table 2: Descriptive analysis on chemical hazards

SN	Items	Mean	Std. Deviation	Decision
7	workers in construction companies are exposed to inhaling chemicals such as cement	3.78	.42	CH
8	during construction, workers make use of chemicals that can cause poisoning	2.28	.64	NCH
9	regular contact with asphalt causes severe health challenges	3.11	.37	CH
10	workers are exposed to corrosive which has adverse health implications	3.13	.36	CH
11	vapour from fumes causes cancer of the lungs	3.82	.41	CH
12	acidic chemicals used in construction affects workers health	3.68	.47	CH
13	fumes from welding during construction can cause health challenges	3.00	.12	CH
14	difficulties in breathing during construction work among workers is dangerous to health	2.81	.43	CH
15	Some chemicals used in construction works are corrosive	3.67	.49	CH
16	bitumen used for construction works are dangerous to workers health	3.75	.46	CH
Grand Mean and Std on Chemical Hazards		3.27	.40	CH

Note: CH = Chemical Hazard, NCH= Non Chemical Hazards

Result obtained in Table 4.1.2 showed a grand mean of 3.27 which is greater than the criterion mean of 2.5. This result revealed that chemical hazard is one of the occupational health hazards among workers in construction companies in Rivers West Senatorial District.

Table 3: Descriptive analysis on psychosocial hazards

SN	Items	Mean	Std. Dev	Decision
17	construction workers work overtime to sustain their employment and this affect their health	1.33	.62	NPsH
18	conflict among construction workers during work may result to emotional injuries	2.06	.29	NPsH
19	workers are exposed to strenuous conditions during work which may result to increase in blood pressure among them	2.82	.47	PsH
20	over work among worker in construction companies can lead to stress which may affect their health conditions	2.95	.93	PsH
21	fear of job termination among construction worker could make them to work under unsafe conditions	2.04	.39	NPsH
22	workers in construction companies are rarely paid based on the energy dispensed during construction work	1.73	.62	NPsH
23	workers in construction companies are mostly regarded as low income workers and hence made to work under health challenging conditions	1.53	.64	NPsH
24	workers that suffer from permanent injuries are less regarded	2.27	.48	NPsH
25	threat to job retention is high among construction workers	2.65	.57	PsH
26	verbal and physical harassment by superior officer could lead to depression among construction workers	2.31	.55	NPsH
Grand Mean and Std on Psychosocial Hazards		2.15	.30	NPsH

Note: PsH = Psychological Hazard, NPsH= Non Psychosocial Hazards

Table 3 showed a grand mean of 2.15 which is less than the criterion mean of 2.5. The result showed that psychosocial hazard is not one of the occupational health hazards among workers in construction companies in Rivers West Senatorial District.

Table 4: Descriptive analysis on biological hazards

SN	Items	Mean	Std. Deviation	Decision
27	regular contact with waste during construction exposes workers to communicable diseases	3.83	.43	BH
28	non utilization of safety equipment exposes workers to workplace diseases	3.79	.44	BH
29	regular exposure to dust particles causes lung cancer	3.09	.35	BH
30	regular fumigation of workplace reduced the risk of snake and insect bite	3.73	.45	BH
31	exposure to chemicals such as asphaltic waste affects workers health	3.04	.25	BH
32	adoption of suitable hygiene measures reduces accidental release and spread of dangerous biological agents from the workplace	3.17	.41	BH
33	having sufficient waste management system in place for safe collection, storage and decontamination of contaminated waste reduces the outbreak of health related hazards	3.92	.31	BH
34	using procedures for safe handling, processing and transport of biological agents and samples that may contain them improves the health status of workers	3.16	.38	BH
35	constant exposure of workers to polluted water during construction work could result to cholera	3.78	.46	BH
36	welding activities during construction has the potentials of impairing workers sight	2.27	.58	NBH
Grand Mean and Std on Biological Hazards		3.34	.36	BH

Table 4 showed a grand mean of 3.35 which is greater than the criterion mean of 2.5. The result showed that biological hazard is one of the occupational health hazards among workers in construction companies in Rivers West Senatorial District.

Table 5: Descriptive analysis on ergonomic hazards

SN	Items	Mean	Std. Deviation	Decision
37	having incorrect posture while lifting work materials could result to strain	2.95	.42	EH
38	bending back, twist and bending over when carrying heavy materials during construction could increase the risk of lower back disorder	3.00	.24	EH
39	the overall weight and configuration of construction materials should be considered when lifting them to avoid strain	3.07	.33	EH
40	failure to break down the load into smaller units to lighten the individual load could result to ruptured disk in the back	3.05	.29	EH
41	wrong grips during construction work could result to bursitis in the shoulder	3.09	.32	EH
42	non use of ergonomically designed tools with specially designed hand grips for repetitive task has the potential of resulting to ergonomic disorder on workers	3.15	.37	EH
43	failure to get additional assistance and non utilization of lift devices wherever possible can cause carpal tunnel syndrome among worker	3.65	.65	EH
44	using the right tools such as screw driver rather than a knife because the tool was not easily accessible could reduce musculoskeletal disorder	3.12	.56	EH
45	keeping tools in top shape to avoid additional exertion when using them will reduce ergonomic disorder	3.68	.57	EH
46	maintaining proper hydration and switching hands periodically will prevent dehydration and wrist disorder	2.98	.31	EH
Grand Mean and Std on Ergonomic Hazards		3.14	.34	EH

Note: EH = Ergonomic Hazard, NEH= Non Ergonomic Hazards

Table 5 showed a grand mean of 3.15 which is greater than the criterion mean of 2.5. The result showed that ergonomic hazard is one of the occupational health hazards among workers in construction companies in Rivers West Senatorial District.

DISCUSSION OF FINDINGS

The findings of the study showed that workers in construction companies in Rivers West Senatorial District of Rivers State are most exposed to biological hazards. This is surprising and may be attributable to the facts that most construction works carried out in Rivers West Senatorial District are on bushy paths and virgin areas. Management of most construction companies in senatorial district are less prepared to control the consequences of exposing workers to hazards associated with such new areas of work. The findings of this study are in keeping with the findings of Ofonime and Oluseyi (2016) that poor implementation of safety policies by management increases the risk of occupational diseases and illness. The findings also corroborate that of Nzuve (2012) that workers in construction companies in rural areas are most vulnerable to occupational diseases and illness because they are rarely provided with the needed safety equipment and training. The similarities in these findings could be attributed to the fact that these companies implement similar safety policies.

The findings of the study are however in variance with that of Umeokafor and Umeadi (2012) that the predominant occupational hazards among workers in construction companies working in rural areas are psychosocial hazards because of their level of exposure and the willingness to retain their

employment despite all odds. The variance in finding between these studies may be attributed to the fact that the companies are operating different occupational safety policies.

CONCLUSION

Based on the data analysis and the findings, it was concluded that workers in construction companies in Rivers West Senatorial District of Rivers State are mostly exposed to biological hazards. It was also concluded that the workers were exposed to physical hazards, chemical hazards and ergonomic but were not exposed to psychological hazards. Just like every other occupation, hazards are inevitable on construction sites

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are postulated:

- 1 The construction company should ensure that the safety team live up to their expectation of identifying and preventing hazards timely by getting a daily report from them.
- 2 Visible sign post indicating position that hazards are most likely found in the company should be strategically placed around the work environment.
- 3 Monitoring team should be set up by the management to constantly report any action or condition that poses hazard to workers in the company.
- 4 Management of construction companies should provide safety training and retraining programmes through seminars, workshops, conferences and part time programmes to workers in order to enhance their knowledge on controlling occupational hazards (with specific attention to biological hazards) in construction companies.

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