

Factors Associated With Occupational Hazard Control Practice of Building Construction Workers in Port Harcourt Metropolis of Rivers State, Nigeria

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ABSTRACT

This study examined the factors associated with occupational hazard control practice of building construction workers in Port Harcourt metropolis of Rivers State, Nigeria. A descriptive cross-sectional survey design was adopted as the research design for this study. A multistage sampling procedure was adopted to select a sample of 500 for the study. The instrument for data collection was a self-structured questionnaire with a reliability coefficient of 0.90. Data collected was analyzed using Statistical Package for Social Science (SPSS) version 20. Statistical tools such as percentage, binary logistic regression and Chi-square were used. The findings of the study on occupational hazard control practice showed that majority (92.2%) of the respondents always keep working material and equipment in good condition and more than three quarter (79.7%) always maintain good housekeeping, more than half (56.8%) use protective materials sometimes, 52.7% rarely use mask while mixing or demolishing and 55.3% always wear foot protection. Overall, 142(30.7%) have good hazard control practice. The tested hypotheses showed that, hazard control practice has a statistically significant relationship with variable such as years of work experience, training and age. It was concluded that occupational hazard control practice of building construction workers was associated with their years of work experience, training, educational status and age. It was recommended that, the effort of the ministry of work and public health professionals at preventing occupational diseases among workers should include education and training for both informal and formal workers on construction sites.

Keywords: Construction, Hazard, Workers, Factors, Port Harcourt

INTRODUCTION

Occupational accident, in particular has been reported to be one of the major causes on industrial hazards especially in the building construction industry. Hazards must be controlled for the safety of the worker and the work to be guaranteed during and after work process. This is because any damage or harm done to either the worker or the work as a result of hazard induced accident will automatically stop the construction process for a considerable period of time. Anupama and Pratibha, (2007) noted that, safety includes measures to prevent human exposure to chemical and physical agents as well as faulty or unsafe work practices. It is concerned with the safety of workers' life and the work itself as well as the situation of development and stability. On the other hand, is any event, object or situation that can cause harm and poses a threat to the health of the worker. Hazards are inherent in every occupation though, its magnitude may vary. This makes hazard control paramount for work to be completed in any occupation, construction inclusive.

The construction industry is one of the most hazardous industries in the world hence, hazard control practices must be held with high level of compliance to protect the health of the worker and to guarantee safety on site. Yet, workers are unconcerned about it. Several factors may likely influence occupational

hazard control especially among workers in construction industry such as availability of personal protective equipment, inconvenience of using them, negative attitude towards safety, age, training, years of experience and negligence among others. A cross-sectional study conducted by Agbana, Joshua, Dackwo, and Metiboba (2016) revealed that workers with 10 years of employment have greater knowledge of hazard control and their knowledge of hazard control is based on the type of training they obtain. In Nigeria, little is known about hazard control among workers due to lack of training which create the potential tendency for exposure to occupational hazard and it could be detrimental to their health. Sometimes, workers with no regular training about safety adherence in the workplace may hardly manage the risk of hazard.

The age of workers are the days, weeks, months and year they live which may influence the practice of safety in order to potentially control occupational hazard. Older workers may have more experience about occupational hazard control other than younger workers. However, age and years of work experience are likely to influence compliance to hazard control in the workplace or industry. In the light of this, Akintayo (2013) reported that workers who worked for less than five (5) days per week were five (5) times more likely to have good knowledge and effective practices of hazard control. Workers with good working experience and years of service would be able to prevent and control hazard in their workplace because of huge amount of knowledge generated. To guarantee the safety of the workers in the building construction industry, there is need to find out the factors which influence their practice of occupational hazard control as to be able to know the factors to be targeted in ensuring workers' adherence to safety practice. Therefore, this study examined the factors associated with occupational hazard control practice of building construction workers in Port Harcourt metropolis of Rivers State, Nigeria.

Research question: The question below was answered in this study:

What are the occupational hazard control practices of building construction workers in Port Harcourt metropolis?

Hypotheses

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

HO₁: There is no significant relationship between years of work experience and occupational hazard control practice among building construction workers.

HO₂: There is no significant relationship between age and occupational hazard control practice among building construction workers.

HO₃: There is no significant relationship between training and occupational hazard control practice among building construction workers.

METHODOLOGY

This study adopted a descriptive, cross-sectional survey design. The population of the study comprised of all the construction workers in all the building construction sites in Port Harcourt metropolis. The sample size comprised of 500 workers. Multistage sampling procedure was adopted for the study. The first stage involved the used simple random technique to select 10 locations in Port Harcourt Metropolis such as Rumuokuta, Oyigbo, Rukpokwu, Akpajo, Rumuolumeni, Elelenwo, Igwuruta, Choba, Rumuokwurusi. In stage two, a stratified proportionate sampling technique was used to select five (5) construction sites in each location. At the last stage (stage 3), purposive sampling techniques was used to select (10) workers from each sites for the study. The instrument for data collection was a self-structured questionnaire titled "Practice of Occupational Hazard Control Questionnaire (KPOHCQ)". The instrument had two sections, A and B. Section A elicited information from the respondents on their personal data such as age, years of work experience, and training. Section B elicited information on the practice of occupational hazard control. In order to validate the instrument, copies of the questionnaire were presented to the research supervisor and two other experts in the department of Human Kinetics Health and Safety Education in Ignatius Ajuru University of Education for correction and validation. The corrections and suggestions made by them were used to produce the final copy. The reliability of the instrument was ascertained by subjecting the validated instrument to a pretest and then to a reliability test using Cronbach alpha. A reliability coefficient of 0.90 was obtained indicating that the instrument was highly reliable hence,

suitable for the study. The Statistical Package for Social Sciences (SPSS) was used for analysis. Statistical tools such as percentage, binary logistic regression and Chi-square were used.

RESULTS

The results of the study are presented in table 1-4 below:

Table 1: Practice of Occupational Hazard Control

Items	Always F(%)	Sometimes F(%)	Rarely F(%)	Never F(%)
Use of protective materials in the workplace	188(40.6)	263(56.8)	10(2.2)	2(0.4)
Having tool box meetings at the working site	174(37.6)	24(5.2)	103(22.2)	162(35.0)
Use of mask while mixing or demolishing	172(37.3)	18(3.9)	243(52.7)	28(6.1)
Wearing foot protection	255(55.3)	194(41.1)	4(0.9)	8(1.7)
Washing of hands with soap before eating in the work site	387(83.6)	68(14.7)	4(0.9)	4(0.9)
Keeping working material and equipment in good condition	427(92.2)	31(6.8)	0(0.0)	5(1.0)
Good housekeeping at site	369(79.7)	90(19.4)	0(0.0)	4(0.9)
Surveying site condition before commencing work	260(56.1)	191(41.4)	6(1.3)	4(1.1)
Use of goggle while standing to inspect work on site	62(13.4)	231(49.9)	136(29.4)	34(7.3)
Use of mask while sanding or drilling	130(28.1)	163(35.2)	140(30.2)	30(6.5)
Use of ladder for all up works	211(45.6)	178(38.4)	70(15.1)	4(0.9)
Use of respirator	8(1.7)	158(34.3)	32(6.9)	263(57.0)
Use of fall-arrest harness system while using ladder	130(28.1)	70(15.1)	243(52.4)	2(0.4)
Wearing hard hat	158(34.1)	285(61.6)	12(2.6)	4(0.9)
Performing regular check up	170(36.9)	42(9.1)	239(51.8)	10(2.2)
Refuse to do job that is exposed to danger	104(22.5)	14(3.0)	74(16.0)	271(58.5)
Use of impact harmers	12(2.6)	92(19.9)	98(21.2)	261(56.4)
Reports accident to the supervisor	110(23.8)	327(70.6)	26(5.6)	0(0.0)

Table 1 revealed the practice of occupational hazard control among building construction workers. The highest proportion in each of the items show that 263(56.8%) use protective materials sometimes, 174(37.6%) have tool box meetings at the worksite always, 243 (52.7%) rarely use mask while mixing or demolishing, 255(55.3%) always wear foot protection, 387 (83.6%) always wash their hands with soap before eating in the work site, 427 (92.2%) always keep working material and equipment in good condition, 369(79.7%) always maintain good housekeeping, 260 (56.1%) always survey site condition before commencing work. Close to half 170 (36.9%) always perform regular check-up, and 327(70.6%) report accident to the supervision sometimes.

Table 2: Regression analysis showing relationship between years of work experience and hazard control practice of respondents

Years of experience	B	S.E.	Wald	df	Sig.	Odds ratio(OR)	95% C.I for Lower Upper	
1-5	Ref		91.252	3	.000			
5-10	-2.827	.338	69.902	1	.000	.059	.030	.115
10-15	-.898	.396	5.129	1	.024	.407	.187	.886
≥16	-2.262	.490	21.290	1	.000	.104	.040	.272
Constant	2.485	.300	68.397	1	.000	12.000		

The regression analysis shows a statistically significant negative relationship between years of work experience and hazard control practice ($p < 0.05$). The result shows that those both those who have worked for 5-10 years (OR = .059; 95%CI = .030-.115) and those who have worked for 10-15 years (OR = .407; 95%CI = .187-.886) were less likely to practice occupational hazard control compared to those who have worked for 1-5 years. Also, those who have work experience of 16 or more years (OR = .104; 95%CI = .040-.272) were less likely to practice occupational hazard control compared to those having 1-5 years of work experience. The result further revealed that as respondents' years of work experience increases hazard control practice decreases (B = -2.262). This might be due to the fact that, those who have worked for long are feeling too much familiarity with the job and think there is no need for hazard control.

Table 3: Regression analysis showing relationship between age and hazard control practice

Age	B	S.E.	Wald	df	Sig.	Odds ratio(OR)	95% C.I for Lower Upper	
18-25	Ref		22.916	3	.000			
26-35	21.59	3.88	.000	1	.996	2.218	.000	.
36-45	.839	.267	9.872	1	.002	2.313	1.371	3.904
46-55	1.59	.336	22.377	1	.000	4.903	2.537	9.474
Constant	-.396	.219	3.279	1	.070	.673		

The analysis shows a significant relationship between age and hazard control practice ($p = 0.000$). Those aged 26-35 years (OR = 2.218; 95%CI = 0.000) and those aged 36-45 years (OR = 2.313; 95%CI = 1.371-3.904) were about 2 times more likely to practice occupational hazard control compared to those aged 18-25 years. Those aged 46-55 years were significantly about 4 times (OR = 4.903; 95%CI = 2.537-9.474) more likely to practice occupational hazard control compared to those aged 18-25 years. The result further revealed that as respondents' age increase practice of hazard control also increases (B = 1.59).

Table 4: Chi-squared test showing relationship between training and occupational hazard control practice

Training	Practice		Total	df	X ² -value	P-values	Decision
	Good	Poor					
Self	12(8.6)	128(91.4)	140(100)	2	138.445	0.000	Rejected
Roadside	8(7.0)	106(93.0)	114(100)				
Company	120(58.8)	84(41.2)	204(100)				
Total	140(30.6)	318(69.4)	458(100)				

P < 0.05 *Significant

The null hypothesis states that there is no significant relationship between training and occupational hazard control practice. The finding of the study revealed a significant relationship between training and hazard control practice (p < 0.05, df = 2, X² = 138.445). The null hypothesis was therefore rejected.

Table 5: Regression analysis showing relationship between educational status and hazard control practice

Education	B	S.E.	Wald	df	Sig.	Odds ratio(OR)	95% C.I for Lower Upper	
Primary	Ref		62.7	3	.000			
Secondary	-20.04	47.250	.000	1	.997	.000	.000	.000
Tertiary	-22.06	47.250	.000	1	.996	.000	.000	.000
None	.000	135.76	.000	1	1.00	1.000	.000	.000
Constant	21.203	47.250	.000	1	.996	1613		

The analysis shows a significant relationship between educational status and hazard control practice (p = 0.000). The result further revealed a negative relationship, as respondents' educational level increase practice of hazard control decreased (B = -22.06). Respondents with secondary and tertiary (OR = 0.000; 95%CI = 0.000) were less likely to adopt hazard control practices.

DISCUSSION OF FINDINGS

The findings of this study on the practice of occupational hazard control showed that majority (92.2%) of the respondents always keep working material and equipment in good condition and more than three quarter (79.7%) always maintain good housekeeping. The finding of this study is akin to Adebola (2014) which showed that majority (90.0%) of the respondents complies with safe work practices and high proportion of (85.9%) have compliance with occupational hazards and safety procedure. The findings of this study also showed that more than half (56.8%) use protective materials sometimes, 52.7% rarely use mask while mixing or demolishing and 55.3% always wear foot protection. The findings of this study is different from that of Jasani, Joshi, Kartha, Mehta, and Shah (2016) where a lesser proportion (25%) of the respondents used one or other form of PPEs to prevent work related hazards and a higher proportion (74%) workers were using PPE irregularly. The finding of this study differs from that of Oluwafemi, Abiola, Akingbade and Faej (2017) where poor practice of occupational safety was recorded. The findings of this study is also different from that of Onowhakpor, Abusu, Adebayo, Esene, and Okojie (2017) where more than half (57.9%) of the respondents had poor work safety practice. The negligence of workers about their health status might be implicated for the poor occupational hazard control found among respondents.

The findings of this study showed a negatively moderate relationship between practice of occupational hazard control and educational background (r -value = -0.410). On bivariate analysis the study shows a significant relationship between practice of hazard control and educational background ($X^2 = 138.534$, $df = 3$, $p = 0.000$). The findings of this study is similar to that of Amabye (2016) which showed a significant association between occupational hazards and educational status ($p < 0.001$). The findings of this study also showed that 70.4% of the respondents who had tertiary education, and 64(24.0%) who had secondary education had good practice of occupational hazard control. This finding is in keeping with that of Adebola (2014) which showed that compliance to hazard control practice was quite high among those with post-secondary education and relatively low in respondents with secondary education and that there was a statistical significant relationship between educational status and practice at 95% level of significance $p \leq 0.05$. The similarity found in the present study and the previous ones might be due to the fact that education is helping to fill in gap in knowledge and the subsequent practice found among the respondents.

CONCLUSION

Based on the findings of the study, it was concluded that occupational hazard control practice of building construction workers was associated with their years of work experience, training, educational status and age.

RECOMMENDATIONS

The following recommendations were made:

1. The effort of the ministry of work and public health professionals at preventing occupational diseases among workers should include education and training for both informal and formal workers on construction sites.
2. Ministry of environment in collaboration with some NGO's should periodically visit the construction site and give seminars on workplace practices.
3. The ministry of works and labour officials should visit construction sites to ascertain safety measure compliance.

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