



Determinants of hazard control practices among timber workers operating in port harcourt metropolis of Rivers State

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Abstract

Safety practices is a global means of reducing accidents in the workplace. The purpose of this study was identify the determinants of hazards control practices among timber workers operating in Port Harcourt metropolis. Five objectives and four null hypotheses were for formulated and tested at 0.05 level of significance for the study. Descriptive cross sectional design was adopted for this study to describe and analyse the data collected from timber workers. The population for the study estimated 1500 workers in Timber processing industries in Rivers State and the sample size of 400 was selected using multi-stage sampling procedure. Validated instrument was used to collect data for the study with reliability coefficient of 0.58 using Cronbach Alpha. The result of the study illustrated that there was a significant relationship between hazard control practices based on age ($p < 0.05$), type of work ($p < 0.05$), training ($p < 0.05$), and level of education ($p < 0.05$). The study concluded that safety practices of occupational hazards was high but differs in age, type of work, training and level of education among others. In regards to this study, it was recommended that trade union and other relevant agencies should organize periodic workshops and training programmes on health and safety to cover proper information on workplace hazards among timber workers.

Keywords: safety practices, hazards, timber workers, Port Harcourt metropolis

Introduction

Occupational hazards are conditions or event an individual is exposed to at the workplace. During work periods, they may be exposed to biological, chemical, physical, ergonomic or mechanical hazard, which predispose the individual to occupational diseases with a variety of health effects. This appears to affect a considerable number of people in a variety of jobs and indirectly impact on the economy especially in developing countries where individuals take for granted the health and safety concerns associated with work due to lack of awareness and fundamental understanding of the interactions between work and health Aliyu *et al.* (2006) ^[4]. According to World Health Organization (WHO) there are about 250 million cases of occupational injuries and illnesses occurring annually worldwide, with prevalence studies from Botswana, Zimbabwe, Zambia, Ghana and Nigeria suggesting that there is a high occurrence of occupational disease in Africa. Steen *et al.* (1997) ^[15], Magauzi *et al.* (2011) ^[10], Siziya *et al.* (2013) ^[14], Bio *et al.* (2007) ^[6] and Birab *et al.* (2012) ^[7]. Though in Nigeria, there appears to be an increase in work related injuries and illnesses, the records of occupational diseases with relevant Government agencies are poor due to inadequate reporting World Health Organization (WHO) (1998), Omokhodion, (2009) ^[12] and Eroke, (2013) ^[18]. The timber workers are no exception to the occurrence of occupational injuries and illnesses. They operate in clusters of privately owned small scale ventures associated with apprenticeship training. Their work involves shaping, cutting, smoothening, processing and marketing of wood and so has a high risk of wood-dust exposure with negative health effects Bean, and Butcher, (2006) ^[5].

It is a source of livelihood for many Nigerians, who are usually located around timber shop with no form of organized occupational health and safety service. As a consequence, they are at an increased risk of developing occupational diseases and illnesses, and as such, preventing, reducing or keeping exposures within safe limits are important to the maintenance of a healthy work force. According to Mumuni (2015), timber products are on high demand in both local and export markets because of the availability of timber wood in Nigeria and workers in sawmill factories that does the processing of woods are frequently exposed to various allergenic, immunotoxic, pernicious, noxious, carcinogenic and toxic substances that arises from wood dust, bacteria and fungi growing on timber. This exposure causes lungs and nasal cancer, bronchitis, rhinitis, decline lung function, contact dermatitis, bronchial hyper responsiveness, asthma and allergic alveocolitis. To support this, Richard *et al.* (2017) ^[13] study showed that saw mill workers had exposure to occupational hazard such as wood dust (81%), and noise (78%). In the same vein, saw dust, mould, formaldehyde and noise has been reported as the by-product of wood processing (Akinbode and Olujimi, 2014) ^[4] and their health effects on the human body has been a major concern. The International Labor Organization (2016) estimated that 2.02 million people die each year from work related incidents or injury and over 3.7 million people suffer from work related diseases while estimated 337 million fetal and non-fetal work related accident per year are all associated to occupational hazards. The timber workers are constantly in contact with different types of wood logs that expose them to microorganisms that cause infections and thus require proper protective measure such as the use of personal protective equipment (PPE) and safe working act to reduce their risk of acquisition of diseases or injury. However, despite the importance of personal protective devices in mitigating occupational health hazards, a study carried out showed that, less than 20% of sawmill workers used protective devices during work activities, which increases the risk of acquisition of occupational hazards. The hazardous working condition which are responsible for diverse occupational hazards include working for long hours, working for long sitting sessions, extensive traveling, night duty and absence from home for several days or weeks. Occupational exposure occurs during the performance of duties and places a worker at risk of infection, disease, injury or accident. Occupational injuries alone account for more than 10 million disabilities or healthy years of life lost whether to disability or premature death and 8% of unintentional injuries worldwide. hazards is as a result of inhalation of wood dust, noise and heat are some of the most common health risk faced by saw mill workers in Nigeria. However, to the best of the researchers' knowledge, study on the occupational hazards of saw mill workers in Rivers State is scarce. Hence, this study unravel the hazard control practices among timber workers in Port Harcourt Metropolis in Rivers State, Nigeria.

Purpose of the study

The purpose of the study was examine the hazard control practices among timber workers in Rivers State. Precisely, this study sought to:

1. Examine hazard control practices among timber workers in Rivers State.
2. Determine hazard control practices adopted by timber workers in Rivers State, based on their age.
3. Examine the hazard control practices adopted by timber workers in Rivers State, based on their types of work.
4. Assess the hazard control practices adopted by timber workers in Rivers State, based on their level of training.
5. Determine the hazard control practices utilized by timber workers in Rivers State based on their level of education.

Hypotheses

The following null hypotheses was formulated and tested at 0.05 level of significance

- 1 There is no significant relationship between hazard control practices among timber workers in Rivers State based on age.
- 2 There is no significance relationship between hazard control practices among timber workers in Rivers State based on type of work.
- 3 There is no significant relationship between hazard control practices among timber workers in Rivers State based on level of training.
- 4 There is no significant relationship between hazard control practices among timber workers in Rivers State based on level of education.

Methodology

The descriptive cross-sectional research design was considered appropriate for this study because it investigated the hazards control practices among timber workers in Rivers State. The population for the study involved 1500 workers in Timber processing industries in Rivers State. The sample size for this study was 400 timber workers This sample size (n=400) was establish using Taro Yamene method. A multi-stage sampling procedure was adopted for this study which was done in 3 stages. Stage one: simple random sampling technique was used to select 12 (twelve) Local Government Area from the existing 23 Local Government in Rivers State without replace by balloting. At the end four Local Government Area were selected from each of the three senatorial districts in Rivers State. Stage two: purposive Sampling technique was adopted to select a total of 700 timber workers in all the Local Governments, such as those with similar features of interest who were engage in full time work operation. Stage three: the proportionate sampling technique was adopted to determine the sample size from each Local Government. The instrument for data collection was a self-structured questionnaire. The structure questionnaire was made up of two section, B and C. The instrument had undergo face and content validity by the project supervisor in Occupational Health and Safety Studies, Department of Human Kinetics, Health and Safety Studies. The Cronbach alpha was computed using Statistical Product for Service Solution (S.P.S.S) to determine the reliability coefficient of .05. Mean, Standard deviation and ANOVA was used to analyze the data from the study. The mean were used to answer the ten research questions. The ANOVA was used to test the hypotheses at .05 level of significance.

Results

Table 1: Frequency and percentage of the hazard control practice among timber workers in Rivers State.

S/N		Always	Sometime	Rarely	Never
1	I utilize hand gloves at work	100 (25%)	181 (42.5%)	79 (19.7%)	40 (10%)
2	I make use of overall	71 (17.35%)	170 (42.5%)	90 (22.5%)	69 (17.65)
3	Helmet is used at work	90 (22.5%)	200 (50%)	71 (17.75%)	39 (9.75%)
4	During operation I use eye goggles.	20 (5%)	40 (10%)	160 (40%)	180 (45%)
5	I make use of boots	40 (10%)	80 (20%)	180 (45%)	100 (25%)
6	I use earplugs/muffs at work?	200 (50%)	100 (25%)	50 (12.5%)	50 (12.5%)
7	I consider the use of face mask	100 (25%)	200 (50%)	91 (22.75%)	9 (2.25)
8	I consider the use of respirator	120 (30%)	180 (45%)	80 (20%)	40 (10%)
9	I sprinkle water before sawing wood at sawmill	20 (5%)	60 (15%)	80 (20%)	240 (60%)
10	Making use of first aid box when there is injury/accident is been considered	20 (5%)	40 (10%)	290 (72.5%)	50 (12.5%)
11	I utilize hospital if there is accident/injury	300 (75%)	60 (15%)	30 (7.5%)	10 (2.5%)
12	I make use of fire extinguisher in case of fire incidence	71 (17.75%)	210 (52.5%)	60 (15%)	59 (14.75%)
13	How often do you clean the wood dust on the floor?	311 (77.75%)	59 (14.75%)	24 (6%)	6 (1.5%)

Table 4.3, from the data in table 3, it was discovered that 100 respondents representing 25% of the sample size said that they utilize hand gloves at work always, 181(42.5%) said they utilize hand gloves at work sometimes while 79(19.7%) and 40(10%) respectively said they utilize hand gloves at work rarely and that they never utilize hand gloves at work. 71 respondents representing 17.35% said that they make use of overall sometimes, 200 (50%) said that they use Helmet at work sometimes, 180 (45%) said that during operation they rarely use eye goggles, 180 (45%) said they rarely make use of boots, 200 (50%) said that they always use earplugs/muffs at work, 200 (50%) said that they consider the use of face mask sometimes, 180 (45%) said that they sometimes consider the use of respirator, 240 (60%) said that they never sprinkle water before sawing wood at sawmill, 290 (72.5%) said that they rarely considered the use of first aid box when there is injury/accident, 300 (75%) that they sometimes utilize hospital if there is injury/accident, 210(52.5%) said they sometimes make use of fire extinguisher in case of fire incidence while 311 (77.75%) said that they always clean the wood dust on the floor.

Hypothesis 5: There is no significant relationship between hazard control practices among timber workers in Rivers State based on their age.

Table 2: ANOVA of the significant relationship between hazard control practices among timber workers in Rivers State based on their age.

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	2.173	9	.724	2.666	.004	Rejected
Within Groups	2254.616	391	1.088			
Total	2256.790	400				

The result table 4.13, showed that the between-sample mean square is lower than the within-sample mean square, and the F test shows that the difference is highly significant with $F=2.666$ and $p<0.05$). This shows there is a significant relationship between hazard control practices among timber workers in Rivers State based on their age. Therefore we reject the null hypothesis and accept the alternative

Hypothesis 6: The result table 4.15, showed that the between-sample mean square is lower than the within-sample mean square, and the F test showed that this difference is highly significant with $F=2.677$ and $p<0.05$). This shows there is a significant relationship between hazard control practices among timber workers in Rivers State based on their types of work. Therefore, reject the null hypothesis and accept the alternative.

Table 3: ANOVA of the significant relationship between hazard control practices among timber workers in Rivers State based on their types of work

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	2.173	9	.734	2.677	.003	Rejected
Within Groups	2244.627	391	2.088			
Total	2246.801	400				

Hypothesis 7: There is no significant relationship between hazard control practices among timber workers in Rivers State based on their level of training.

Table 4: ANOVA of the significant relationship between hazard control practices among timber workers in Rivers State based on their level of training.

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	39.772	4	13.257	17.458	.000	Rejected
Within Groups	177.695	396	.759			
Total	217.466	400				

The result table 4.17, showed that the between-sample mean square is higher than the within-sample mean square, and the F test shows that this difference is highly significant with $F=17.458$ and $p<0.05$). This showed there is a significant relationship between hazard control practices among timber workers in Rivers State based on their level of training. Therefore, reject the null hypothesis and accept the alternative.

Hypothesis 8: There is no significance relationship between hazard control practices among timber workers in Rivers State based on their level of education

Table 5: ANOVA of the significant relationship between hazard control practices among timber workers in Rivers State based on their level of education.

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	13.584	3	4.528	7.394	.000	Rejected
Within Groups	1143.311	397	.612			
Total	1156.895	400				

The result table 4.19, showed that the between-sample mean square is higher than the within-sample mean square, and the F test shows that this difference is highly significant with $F=7.394$ and $p<0.05$). This showed there is a significant relationship between hazard control practices among timber workers in Rivers State based on their level of education. Therefore reject the null hypothesis and accept the alternative hypotheses.

Discussion of Findings

Hazard Control Practices among Timber Workers in Rivers State

The findings from table 4.3 revealed that timber workers have not put adequate measures in place to check the occupational hazard, they only implement few measures. The reason for this expected result was mainly because of low orientation of the hazard. Also those who are oriented are indifferent about controlling such hazard since the effect are not immediate and severe. The result of this study is in line with studies of illustrated that safety measure among workers was based on certain demographic factors such as age, level of education, work experiences among others. Tabraiz, *et al.*, (2015) ^[2] confirmed in their study that work experience and age had significant influence with awareness of safety practices and safety regulations affirmed that age and work experience are among the factors that influence the extent of compliance with safety devices which in turn serve as a major means of controlling hazards in timber industry. Aguwa, *et al.*, (2014) ^[1, 2] concord that level of education, type of work, work experience were statistically significant with safety practices to reduce that risk of hazards among workers. It is possible to note that socio-demographic factors of timber workers have the potential chances of influencing the behaviour of timber workers. Provided they are able to go to work, do the work and get their wages, control of hazard to a great extent is taken for granted. The few control practices put in place are utilization of PPE, sprinkling of water at sawmill and cleaning wood dust on the floor. The practices the workers applied was arguably born out of necessity added that workers who experience hazards at work place were due to non-use of protective device. Similarly, Hamid, *et al.*, (2018) ^[9] reported that effective use of safety devices is the best means of eliminating hazards associated with any work or occupation. Having a policy to prevent and manage abuse is non-negotiable in such a competitive job where everyone is looking for as much customers as possible to stay in business. Hence they formulate means of keeping them. This include doing what they can to prevent abuse and even tolerate abuse when it comes. It is important to note that most of the timber workers do not observe regular breaks, thus they are always at work with little or no rest thereby stretching the body system. It was also obvious among the timber workers that most of them don't have any formal training on the job. The implications of this finding of poor control measures put by the respondent was that the timber workers stand the chance

of suffering whatever occupational effects the hazard may bring. It was a matter of time and continuous exposure that the occupational effects will surface.

Conclusion

Timber workers are faced with increased risks of diseases, accidents and challenges of protection and safety. Findings showed that safety practices of timber workers was low, but timber workers have not associated the effects of the hazards they generally experience to the specific type of control measure and as such, they remain continuously exposed to the risk of accidents and diseases especially the upper respiratory illnesses which appear to be their predominant complaint.

Recommendations

Based on the findings of this study the following recommendations were made

1. The managers in timber factories should ensure the use of personal protective equipment (PPE) among workers.
2. The services of safety personnel should be employed in each timber factory to improve safety practices among timber workers.
3. Trade union and other relevant agencies should organize periodic workshops and training programmes on health and safety to cover proper information on workplace hazards among timber workers.

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