



Occupational Hazards And Safety Practices Of Furniture Workers In Bayelsa State, Nigeria

Alozie Bethel Chinegbo

**Department of Public Health,
Faculty of Basic Medical Sciences, Clifford University Ihie Abia State, Nigeria**

ABSTRACT

This study investigated the occupational hazards and safety practices among furniture workers in Bayelsa State. Seven objectives, seven research questions and six hypotheses were stated to guide the study. Literature was reviewed under conceptual framework, theoretical framework and empirical review. A descriptive cross sectional survey design was adopted with a population which consisted of 1,345 furniture workers in Yenagoa, Bayelsa State. A sample size of 440 was selected using a multi-stage sampling procedure. Data was collected using structured questionnaire with a reliability coefficient of 0.79 and analyzed with the aid of the statistical product for service solution using the point biserial correlation at 0.05 alpha level. The result showed that there was an overall low extent of safety practice. However, the safety practices included: washing of hands with antibacterial soap after daily work to avoid contamination (3.37 ± 0.85) and wearing hand gloves before work begins (2.67 ± 1.23). There was a statistically significant relationship between safety practice and occupational hazards such as physical hazards ($n = 413, r = 0.82, p < 0.05$), chemical hazards ($n = 413, r = 0.71, p < 0.05$), biological hazards ($n = 413, r = 0.82, p < 0.05$), ergonomic hazards ($n = 413, r = 0.63, p < 0.05$), psychosocial hazards ($n = 413, r = 0.54, p < 0.05$), and mechanical hazards ($n = 413, r = 0.59, p < 0.05$). It was concluded that furniture workers in Bayelsa State had poor safety practices which increased their exposure to physical, chemical, biological, ergonomic, psychosocial and mechanical hazards. It was recommended among others that environmental Protection Agency should visit furniture workshops to ensure that workplace operations meet required safety standards to protect the workers from occupational hazards exposure.

Keywords: Furniture, Hazards, Occupation, Workers, Bayelsa.

INTRODUCTION

There is no occupation that is without hazards. Furniture industries is seen as on the most hazardous industries or workplace contributing to recurrent cases of accident, injury, deformity and even death of workers. Hazards in the occupation affect the rate of productivity and performance of workers because everybody is at risk of accident and require consistent adherence to safety precautions to minimize hazards. In terms of furniture industries, there are several sectors, characterized by high levels of occupational risks, such as the construction, manufacturing, forestry, woodworking and furniture industries, which account for more than two-thirds of all fatal accidents at work. Hazardous chemicals, which include the following: spray paint, acids, caustic substances, disinfectants, glues, heavy metals (mercury, lead, aluminium), paint, pesticides, petroleum products, and solvents. According to Orisa-Ubi (2022), hazard is an agent having the potential to cause harm or hurt to the target. The International Labour Organization (ILO, 2016), estimated that 2.02 million people die each year from work related diseases while estimated 337 million fetal and non-fetal work related accident per year are all associated to occupational hazards in response to this the

International Labour Organization (ILO) constitution sets forth the principle that workers should be protected from sickness, diseases and injury arising from their occupation.

The furniture workers are constantly in contact with different types of wood logs that expose them to micro-organisms that cause infections and thus requires proper protective measure such as the use of Personal Protective Equipment (PPE), like hand gloves, nose masks, coverall, ear mugs, for safety working act to reduce their risk of acquisition of diseases or injury. Timber workers are faced with a wide range of hazards on the job, the hazards include chemicals such as adhesives, pesticides, insecticides, exposure to fumes or gases from operating machine, exposure to fungicides, exposure to smoke from burning dust and wood pieces, inhalations of burning dust and wood pieces, fumes of gases, at the workplace puts the workers at risk of occupational disease such as impaired lung function, chronic bronchitis, occupational asthma, nasal cancer and increasing risk of lung cancer (Biswas, et al 2016). The occupation could also expose workers to physical, biological, ergonomic hazards among others.

Physical hazards such as vibration from sawing machine, exposure to noise from sawing machines and generator set, exposure to flying and falling objects like sharp woods and exposure to heat from machine at workplace can put the workers at the risk of hearing impairment, while biological hazards such as fungi/mould, exposure to parasitic organism, exposure to general waste, airborne pathogens and insects at the Furniture industries puts the workers at risk of contracting infection, airborne microflora from secondary infection of the wood with molds is also implicated as part of risk factor of the respiratory system (Berhe, et al 2015). Ergonomic hazards among the industrial workers are comfortable work station, being cut in or struck by operating machine, repetitive work or movement, heavy lifting and pulling movement of logs & poor body position or awkward position of the body while working can put the workers at the risk of sustaining injury, slip and fall while carrying heavy log of wood. Psycho-social hazards like occupational stress, long working hours, loss of wood due to high emotional demand, persistent fatigue or tiredness due to work related activity and workplace violence puts the worker at risk of being cut or rolled over by machine as a result of stress out or fatigue, this can lead to instant death (Amadi, 2011).

A furniture or lumber mill is a facility where logs are cut into lumber. Modern furniture or wood use a mechanized saw to cut logs lengthwise to make tong pieces and crosswise depending on standard or custom sizes (Dimensional lumber). If the operator is not careful, the motorized saw might cut off part of his body which might lead to severe bleeding or death (Izudi, et al 2017).

The most basic kind of furniture equipment consists of a chain saw, a customized jig, saw spindle moulders, pressing machines, surface planers, morticer which is used for production of square holds and tenons with the slot produced from overlapping the square holes. The work piece should not be moved during cutting as this can break the cutter, therefore, the cutter should be withdrawn before the work piece is moved. Another danger that the morticer causes is accidental contact with the cutters so it is also important to switch off the machine when changing the workplace. However, even accidental contact with the cutters when the machine is switched off can still cut hands; inadequate space around machine can lead to operator being pushed by passersby to the moving part (cutter) which may result to cutting of the operator's body parts. One of the root causes of workplace injuries, illnesses and accidents is the failure to identify or recognizes hazards that can occur, or that could have been anticipated (Izudi, et al 2017). A critical element of any effective safety and health program is a proactive, on-going process to identify and assess such hazards. To identify and assess hazards; employers and workers should; collect and review information about the hazards present or likely to be present in the workplace; conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards; Investigate injuries, illnesses, incidents and close calls/near misses to determine the underlining hazards, their causes, safety and health program shortcoming; group similar incidents and identify trends in injuries, illnesses and hazards reported (Health & Safety Executive 2021).

Control measures for chemical hazards are to ensure that all chemicals are labeled properly, harmful chemicals should be isolated, stored properly to reduce risks of fire and -explosion. The use of protective clothing ensures administrative controls and use of PPE National Institute of Occupational Safety and Health (NIOSH, 2014). The damages done by hazards on furniture workers and the workforce cannot be undermined as it accumulates to poor health. Amadi (2011) stated that poor health can lead to poor

disposition and capacity for work, poor performance, reduce productivity, absenteeism, sickness and contributes to risk for the worker in the industrial.

In Nigeria, the situation is not exception, for hazardous substances like every other developing nation. According to Oluwagbeni (2011), Nigerian have increased in magnitude sophistication and diversity over thirty years with challenges of ensuring and sustaining best practices and equipment required to perform high risk procedures. However, protecting the health and wellbeing of the worker is difficult. Furniture or wood workers are exposed to hazards which significantly impair their health and quality of life, with multiplier effect on their immediate and extended family members that are poorly prepared to handle environmental hazard. Inhalation of airborne dust at the workplace puts the workers at many risks. In developed and developing countries, over exposure to dust causes disease, temporary and permanent disability and deaths. The failure of furniture workers to comply with safety measure have contributed to high prevalence of occupational hazards.

Workers of furniture industries in Bayelsa state and other metropolis are exposed to and suffered a lot of health problems, ranging from physical injury, infections to impairment. Most workers in the furniture industries are amputated as a result of injury from the heavy machine they operate in the industry. Injuries that occur in the industry are mostly as a result of inadequate work way space. The most common hazard among furniture workers is the noise which causes impaired deafness. Workers in furniture industries that processes wood are exposed to allergenic, immunotoxic, pernicious, noxious, carcinogenic and toxic substances that arises from the wood dust, bacteria and fungi growing on furniture. This exposure causes lungs and nasal cancer, bronchitis, rhinitis, decline lung function, contact dermatitis, bronchial hyper responsiveness, asthma and allergic alveocolitis. Furniture workers are prone to diverse environmental hazards ranging from biological, chemical, ergonomic, physical and psycho-social. Biological infectious diseases; pesticides, ecological interaction among organisms, chemical, synthetic and natural chemicals; physical hazards occur naturally and pose health hazards, such as hearing impairment, ultra-violet radiation from sunlight.

Most furniture workers in Bayelsa State have many health challenges ranging from amputations, scars all over the body, respiratory infections, and various deformities such as sight and hearing impairments to incapacitation due to irredeemable damages to the physical health and chronic diseases. The researcher being very close to many workers from this type of industry have notice that these workers have wrong perception that any person who works in timber can never be free from one injury to other health risks associated with the job. They believe it is the part they must pay for working in the industry. Due to these observations that timber workers in Bayelsa State have high cases of amputations and declining health, the researcher decided to find out environmental hazards peculiar to the workplace and how waiters protect themselves from health risks arising from these hazards. In terms of furniture industries, there are several sectors, characterized by high levels of occupational risks, such as the construction, manufacturing, forestry, woodworking and furniture industries, which account for more than two-thirds of all fatal accidents at work. Hazardous chemicals, which include the following: spray paint, acids, caustic substances, disinfectants, glues, heavy metals (mercury, lead, aluminium), paint, pesticides, petroleum products, and solvents. Little or no studies have been carried out check the activities of upholstery workers regarding the safety practices and associated hazards. In the light of this, the researcher sought to assess the occupational hazards and safety practices among furniture workers. The study tested the following hypotheses:

The following null hypotheses were postulated and tested at 0.05 alpha level:

1. There is no significant relationship between physical hazard and safety practices among furniture workers in Bayelsa State;
2. There is no significant relationship between biological hazard and safety practices among furniture workers in Bayelsa State;
3. There is no significant relationship between chemical hazard and safety practices among furniture workers in Bayelsa State;
4. There is no significant relationship between ergonomic hazard and safety practices among furniture workers in Bayelsa State.

5. There is no significant relationship between psychosocial hazard and safety practices among furniture workers in Bayelsa State.
6. There is no significant relationship between mechanical hazard and safety practices among furniture workers in Bayelsa State.

METHODOLOGY

The study adopted a descriptive cross sectional survey design with a population which consisted of 1345 furniture workers in Yenagoa in Bayelsa State, Nigeria (Source: Furniture and Allied Association, 2021). The sample size for the study was 440 which was estimated using Taro Yamane formula given thus: $n = N / 1 + N(d)^2$. Where n = sample size, N = population (714) and d = error level set at 0.05. A multi-stage sampling procedures was adopted to select the respondents. At stage one the simple random sampling technique was used to select the six (6) locations in Yenagoa which include Opolo, Otio, Yenuzue-gene, Bay-bridge Road, Kpansia, Okaka. At the second stage, the cluster sampling technique was adopted to select furniture workers since they operate at different strategic positions within the selected locations in Yenagoa. Sub-group of furniture workers were also selected from different locations within the designated area of the study to ensure collection of data. This sub-group enabled the researcher to reach the participants and obtain information from them.

The instrument for data collection was a self-developed questionnaire titled “Occupational Hazards and Safety Practices among Furniture Workers Questionnaire (OHSPUQ) with a reliability coefficient of 0.79. Data collected was analyzed with the aid of the Statistical Product for Social Solution version 23.0. The statistical tool used was the point biserial correlation at 0.05 significance level.

RESULTS

Table 1: Point Biserial Correlation showing significant relationship between physical hazard and safety practices among furniture workers

Variables		Safety	Biological hazards	Remark
Safety	Pearson correlation	1	0.82	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Biological hazards	Pearson correlation	0.82	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship
 Table 1 showed the Pearson Correlation of significant relationship between physical hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between physical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.82$, $p = 0.00$). Thus, the null hypothesis which stated that there is no significant relationship between physical hazard and safety practice among furniture workers in, Bayelsa State was very high.

Table 2: Point Biserial Correlation showing significant relationship between chemical hazard and safety practices among furniture workers

Variables		Safety	Chemical hazards	Remark
Safety	Pearson correlation	1	0.71	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Chemical hazards	Pearson correlation	0.71	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship

Table 2 showed the Pearson Correlation of significant relationship between chemical hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between chemical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.71$, $p = 0.00$). Thus, the null

hypothesis which stated that there is no significant relationship between chemical hazard and safety practice among furniture workers in Bayelsa State was very high.

Table 3: Point Biserial Correlation showing significant relationship between biological hazard and safety practices among furniture workers

Variables		Safety	Biological hazards	Remark
Safety	Pearson correlation	1	0.82	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Biological hazards	Pearson correlation	0.82	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship

Table 3 showed the Pearson Correlation of significant relationship between biological hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between biological hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.82$, $p = 0.00$). Thus, the null hypothesis which stated that there is no significant relationship between biological hazard and safety practice among furniture workers in Bayelsa State was very high.

Table 4: Point Biserial Correlation showing significant relationship between ergonomic hazard and safety practices among furniture workers

Variables		Safety	ergonomic hazards	Remark
Safety	Pearson correlation	1	0.63	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Ergonomic hazards	Pearson correlation	0.63	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship

Table 4 showed the Pearson Correlation of significant relationship between ergonomic hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between ergonomic hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.63$, $p = 0.00$). Thus, the null hypothesis which stated that there is no significant relationship between ergonomic hazard and safety practice among furniture workers in Bayelsa State was very high.

Table 5: Point Biserial Correlation showing significant relationship between psychosocial hazard and safety practices among furniture workers

Variables		Safety	Psychosocial hazards	Remark
Safety	Pearson correlation	1	0.54	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Psychosocial hazards	Pearson correlation	0.54	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship

Table 5 showed the Pearson Correlation of significant relationship between psychosocial hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between psychosocial hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.54$, $p = 0.00$). Thus, the null hypothesis which stated that there is no significant relationship between psychosocial hazard and safety practice among furniture workers in Bayelsa State was very high.

Table 6: Point Biserial Correlation showing significant relationship between mechanical hazard and safety practices among furniture workers

Variables		Safety	Psychosocial hazards	Remark
Safety	Pearson correlation	1	0.59	Very high relationship
	Sig.	.	0.00*	
	N	413	413	
Psychosocial hazards	Pearson correlation	0.59	1	
	Sig.	0.00*	.	
	N	413	413	

Guide: 0.00-0.19 = very low, 0.20-0.39 = low, 0.40-0.59 = moderate, 0.60-0.79 = high; ≥ 0.80 = very high relationship

Table 6 showed the Pearson Correlation of significant relationship between mechanical hazard and safety practices among furniture workers. The result revealed that there was a statistically significant relationship between mechanical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.59$, $p = 0.00$). Thus, the null hypothesis which stated that there is no significant relationship between mechanical hazard and safety practice among furniture workers in Bayelsa State was very high.

DISCUSSION OF FINDINGS

The result revealed that there was a statistically significant relationship between physical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.82$, $p = 0.00$). The finding of this study is expected because safety practice helps to guard against occupational hazard exposure like physical hazard as found in this study. The finding of this study corroborates that of Esaiyas, et al (2018) whose study on occupational hazard and safety practice among wood workers in Hawassa, Ethiopia showed a statistically significant relationship between physical hazards and safety practice among furniture workers. The finding of this study is also similar to that of Kargar-Shouroki, et al (2022) whose study on among furniture workers showed a relationship between physical hazard and safety of workers. The finding of this study is also in line with that of Biswas et al. (2021) who studied occupational hazard exposures: a scoping review of the recent literature revealed a relationship between physical hazard and safety practice among workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

The result revealed that there was a statistically significant relationship between chemical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.71$, $p = 0.00$). The finding of this study is expected because when safety practices are neglected it gives room for increased occupational hazard exposure like chemical hazard as found in this study. The finding of this study is in keeping with that of Ikogho and Ikogho (2022) whose study on chemical hazards and allergic diseases of furniture makers and attitude towards the use of protective equipment in Ethiopie East L.G.A of Delta State revealed a significant relationship between chemical hazards exposure and safety practices of furniture workers. The finding of this study is in line with that of Akinyemi, et al (2019) whose study on among furniture makers revealed a significant relationship between chemical hazards exposure and safety practices of furniture workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

The result revealed that there was a statistically significant relationship between biological hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.82$, $p = 0.00$). The finding of this study is expected because when safety practices are neglected it gives room for increased occupational hazard exposure like biological hazard as found in this study. The finding of this study is in line with that of Akinyemi, et al (2019) whose study on among furniture makers revealed a significant relationship between biological hazards exposure and safety practices of furniture workers. The finding of this study is in keeping with that of Ikogho and Ikogho (2022) whose study on hazards and allergic diseases of furniture makers and attitude towards the use of protective equipment in Ethiope East L.G.A of Delta State revealed a significant relationship between biological hazards exposure and safety practices of furniture workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

The result revealed that there was a statistically significant relationship between ergonomic hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.63$, $p = 0.00$). The finding of this study is expected because when safety practices are neglected it gives room for increased occupational hazard exposure like ergonomic hazard as found in this study. The finding of this study is in keeping with that of Ikogho and Ikogho (2022) whose study on ergonomic hazards and allergic diseases of furniture makers and attitude towards the use of protective equipment in Ethiope East L.G.A of Delta State revealed a significant relationship between ergonomic hazards exposure and safety practices of furniture workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

The result revealed that there was a statistically significant relationship between psychosocial hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.54$, $p = 0.00$). The finding of this study is expected because when safety practices are neglected it gives room for increased occupational hazard exposure like chemical hazard as found in this study. The finding of this study is in keeping with that of Ikogho and Ikogho (2022) whose study on chemical hazards and allergic diseases of furniture makers and attitude towards the use of protective equipment in Ethiope East L.G.A of Delta State revealed a significant relationship between psychosocial hazards exposure and safety practices of furniture workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

The result revealed that there was a statistically significant relationship between mechanical hazard and safety practice as $p < 0.05$ ($N = 413$, $r = 0.59$, $p = 0.00$). The finding of this study is expected because safety practice helps to guard against occupational hazard exposure like mechanical hazard as found in this study. The finding of this study corroborates that of Esaiyas, et al (2018) whose study on occupational hazard and safety practice among wood workers in Hawassa, Ethiopia showed a statistically significant relationship between mechanical hazards and safety practice among furniture workers. The homogeneity of the study respondents might be implicated for the similarity found as both studies were carried out among furniture workers.

CONCLUSION

Based on the findings of the study, it was concluded that furniture workers in Bayelsa State had poor safety practices which increased their exposure to physical, chemical, biological, ergonomic, psychosocial and mechanical hazards.

RECOMMENDATIONS

The following recommendations were made based on the findings of the study:

1. Environmental Protection Agency should visit furniture workshops to ensure that workplace operations meet required safety standards to protect the workers from occupational hazards exposure.
2. Safety personnel should organize safety training for furniture workers in Yenagoa from time to time to keep them updated about current safety practices in their profession.
3. Furniture workers should continue to ensure safe workplace for themselves and those under them by always monitoring every activity in the workshop and emphasizing adequate compliance.

4. Professional organizations such as the National Industrial Safety Council of Nigeria (NISCN), the Institute of Safety Professionals of Nigeria (ISPON) and trade unions should organize periodic workshops and training programmes on occupational hazards and safety for furniture workers.
5. The managers in every furniture workshop should ensure adequate procurement of safety equipment to avoid any lapses in safety practices brought about due to unavailability of personal protective equipment.
6. The furniture workers should help themselves by ensuring that they do not approach safety practices with negligence as such act could be detrimental to their health as it exposes them to danger, thus, they must be very mindful of safety practices.

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