

## **Influence of Safework Practices on Occupational Health Hazards Prevention among Sawmill Workers in Ilorin South Local Government Area, Ilorin**

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**Abstract.** This study investigated safe work practices and occupational health hazards prevention among sawmill workers in Ilorin south local government. Relevant literature were reviewed, some of the area reviewed include: types of hazards, effects and importance of occupational health and safety, use of nose guard, eye protection and hand glove, use of warning signals and occupational health hazards. A descriptive research design of survey type was used for the study. The population consist of all sawmill workers in Ilorin south local government area, Ilorin. A simple random sampling technique was used for sample selection. The sample consists of two hundred respondents. A researcher developed questionnaire was used as research instrument for data collected, which was validated and tested for reliability. Chi-square was used to analyze the data collected from the respondents. The hypotheses were tested at 0.05 alpha level of significance and at degree of freedom of 9. The results of the study reveal that; use of protective materials significantly prevent occupational health hazards among sawmill workers with  $\chi^2$  value of 59.333 > table value of 16.92 at (df) of 9 and use of warning signals significantly prevent occupational health hazards among sawmill workers with  $\chi^2$  value of 153.65 with table  $\chi^2$  value of 16.92 at df of 9. Based on the findings of the study, it was concluded that Use of use of protective material will

significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin, Use of warning signals will significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin. It was however recommended that Seminars, workshops, conferences should be organized to enlighten the sawmill workers on the importance of use of protective materials in the sawmill and Health educators should also enlighten the sawmill workers on the importance of using warning signals as it prevents occupational health hazards.

### **1. Introduction**

Occupational Health and Safety (OHS) management protects the safety, health, and welfare of the people at the workplace. In 1950, the first session of the joint International Labour Organization (ILO) and the World Health Organization (WHO) committee on occupational health adopted a definition of occupational health. The definition was subsequently revised in 1995 and states that: Occupational health should aim at promotion and maintenance of the highest degree of physical, mental and social well – being of workers in all occupations: the prevention among workers of departures from health caused by their working conditions: the protection of workers in their employment from risk resulting from factors adverse to health, the

placing and maintenance of the workers in an occupational development adapted to his physiological and psychological capabilities and, to summarize: the adaptation of work to man and of each man to his job (Gudotti, 2011).

Safety constitutes one of the essential human needs, as postulated by Abraham Maslow in his theory of need hierarchy. Feeling safe at work ranks as a very important factor in job satisfaction (Kreitner 2007). In an attempt to safety, there are needs for organization to incorporate guaranteeing worker's safe work execution under a climate capable of enhancing the physical, mental, and emotional conditions organizational policy of this nature is often categorized under health and safety under work environment into their policy, Hall and Goodale (2003) described employee health as the absence of illness or diseases resulting from the interaction of employee and the work environment. In general term, health means a state of complete physical, emotional, mental and social ability of an individual to cope with his environment, and not merely the absence of diseases or infirmity (Hippocrate, 2005).

Health is the art and science of preventing diseases, promoting physical and mental health sanitation and personal hygiene, control of infections and organization of health service (Lucas, 2001) On the other hand, safety means freedom from the occurrence or risk of injury or loss (Aswathappa, 2004). Aswathappa (2004), described industrial or employee safety as the protection of workers from the danger of industrial accidents. Safety can as well be referred to as the absence of injuries due to the interaction of the employee and the work environment Lucas (2001).

In a general perspective, safety means a condition of being safe from undergoing or causing hurt, injuries or loss. Hence, safety policies may encompass activities directed at either reducing or complete removal of hazardous conditions capable of causing bodily injuries. Organizational Safety policy, according to Aswathappa (2004), specified the company's safety goals and designates the responsibilities and authority for their achievement. Organization health and safety in the context of

this paper is concerned with the health and safety of workers which Annaah (2004) described as part and parcel of human security and as a basic human right.

According to International Labour Organization (ILO) (2005), organizational health and safety focus on the development of specific measures and programmes, aimed at protecting employees in the course of performing their duties to maximize productivity and improve the overall organizational performance. The primary aim of occupational health and safety programme is the prevention of accidents and illness, which employs knowledge as the principal tool. Only accurate knowledge of the risks and adequate training in handling them can enable the worker to adopt appropriate behaviour in the hazardous working environment. A successful accident prevention programme depends on leadership by the employer and safe work habits and practice by the employees (Hatting & Acutt 2003).

According to the World Health Organization (WHO), a substantial part of the general morbidity of the population is related to work (WHO, 2007). This assertion, though frightening, is not surprising as workers represent half of the global population and contribute greatly to the economic and social value of contemporary society (WHO, 2006). Occupational disease has become by far the most prevalent danger faced today by people at their work (WHO, 2006). A new assessment of workplace accidents and illness by the ILO (2005) indicated that occupational disease amounts to 1.7millionm annual work – related death and outpaces fatal accidents by four to one.

According to Stack and Elkow (2001), an accident is a perfectly natural product of n unorganized way of life. Disorder in the environment is a basic cause of the accident. The major keys to safety and survival are thus, the development of right attitude and behaviour in anticipating danger and being adequately prepared. It is the function of safe work practice to develop public consciousness of the need for accident control and management (Saarela, 2006). Training and instructional strategies that

lead to the development of good attitudes towards safety is called safe work practices. The proper control of hazardous conditions of the environment can be effective means of preventing the avoidable losses through accidents (Viaene, 2003).

However, the goal of every organization, whether profit or not – profit oriented is to work towards achieving the corporate objective for its existence. The extent to which this goal can be actualized depends principally on the workforce (Geller, 2009). The work environment has also been described as the aggregate of all living and working conditions that may influence the life and health of the workers or workmen. It includes lifestyle, culture, values, beliefs, perception of quality, stakeholders, perception of value for money, current situation (history), changes, benefits or risks of those changes and health promotion strategies. The work environment consists of various factors which introduce new dimensions to health, causing diseases and injuries which include, work accidents and exposure to hazards. Emeharole & Iwok (2008) asserted that occupational stress results from negative environmental factors associated with the job. Studies on the work environment observed that problems resulting from industrial pollution, occupational hazards and the quest for profit by the employers cause occupational diseases and health problems for the workers. Consequently, the work site could be a source of health problems for the workers, despite its role in the economic life of the individual (Denise, 2005).

However, in Occupational and Environmental Epidemiology, we prefer to define these two words as follows: LaMontagne, Barbeau, Youngstrom, Lewiton, Stoddard, McLellan, Wallace and Sorensen (2004) Hazard is the potential to cause harm; risk on the other hand is the likelihood of harm (in defined circumstances, and usually qualified by some statement of the severity of the harm). The relationship between hazard and risk must be treated very cautiously. If all other factors are equal –especially the exposures and the people subject to them, then the risk is proportional to the hazard. However, all other factors are very rarely equal (Peter, 2009)

Occupational hazards can be divided into two categories: Safety and Health Hazards. Safety Hazards that cause accidents that physically injure workers, and Health Hazards which result in the development of disease (Gorman, 2003). It is important to note that a hazard only represents a potential to cause harm. Whether it actually causes harm will depend on circumstances, such as the toxicity of the health hazard, exposure amount, and duration. Hazard can also be rated according to the severity of the harm they cause a significant hazard being one with the potential to cause a critical injury or death (Ontario Ministry of Labour, 2013). Occupational hazards may lead to illness, injury or death. They can include physical risk like falls and exposures to heavy machinery, along with psychological ones such as stress. Occupational hazards like exposure to chemical, biological and radiological agents are also concern and more reason why use of protective material such as Nose guard, hand gloves, warning signs, face protector and boots have been observed to be an effective safework practice particularly in lumber industries. People who work in jobs with recognized occupational safety hazards, special training is often provided so that the people are made aware of the hazards (Wise, 2013). But the point should be stressed that when health is addressed, safety is automatically taken care of because a healthy workplace is by definition a safe workplace (International Labour Organization, 2011).

The dynamics of accidents and illnesses at the work place can be understood from some basic concepts namely: relationship between work and health; the worker with his pre-existent health status enters into a work place. Factors that influence around him while at work are hazards which are physical, chemical, biological and ergonomic in nature. The workers protective mechanism that is available is the relevant regulations and relevant policies that are in place; with this in mind the focus of occupational health becomes three pronged; health promotion and maintenance of the highest degree of physical, mental and social wellbeing of all workers; prevention of adverse health effects due to work; and, improving working environment and work to become conducive to health and safety (Eisner, 2001).

## 2. Statement of Problem

The human, social and economic costs of occupational accidents, injuries and diseases and major industrial disasters have long been causing for concern at all levels from the individual workplace to the national and international. Measures and strategies designed to prevent, control, reduce or eliminate occupational hazards and risks have been developed and applied continuously over the years to keep pace with technological and economic changes. Despite this continuous trend, occupational accidents, and diseases are still too frequent and their cost in terms of human suffering and economic burden continues to be significant.

According to International Labour Organization recent report estimated that 2 million occupational fatalities occur across the world every year (ILO, 2003), the highest proportions of these deaths being caused by work-related cancers, circulatory and cerebrovascular diseases, and some communicable diseases. The overall annual rate of occupational accidents, fatal and non-fatal, is estimated at 270 million (Hämäläinen, Takala & Saarela, 2006). Some 160 million workers suffer from work-related diseases and about two-thirds of those are away from work for four working days or longer as a result.

Recent data from the ILO and from the World Health Organization (WHO, 2013) indicate that overall occupational accident and disease rates are slowly declining in most industrialized countries, but are level or increasing in developing and industrializing countries (Alli, 2008). Poor performance in occupational health and safety (OHS) can take a heavy financial toll on any business, not to mention the human cost of work-related illness, injury, and fatality. This is the primary aim of an effective Occupational Health Safety – Management System (OHS – MS) which include the use of protective materials of different range. The implementation of such a system can also help your business to deal with the legal imperatives, ethical concerns, industrial relations considerations relating to workplace safety, and to improve its financial performance. Every employee is responsible for

his own safety and the safety of anyone else who may be affected by the work he does (Kotze, 2002). Based on the foregoing, it is necessary to study the influence of safework practice on occupational health prevention among sawmill workers in Ilorin south local government area, Ilorin. Specifically, to investigate if the use of protective materials (hand gloves, nose guard, and boot) prevents occupational health hazards and to find out if the use of warning signals prevents occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

## 3. Research Questions

The following research questions were raised to guide this study

- (i) Will the use of protective materials (hand gloves, nose guard, and boot) prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin?
- (ii) Will the use of warning signs prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin?

## 4. Research hypotheses

The following research hypotheses were formulated to guide this study:

- Use of protective materials (hand gloves, nose guard, and boot) will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.
- Use of warning signals will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

## 5. Methodology

This research design used was basically a descriptive research of the survey type. The population for this study comprises all sawmills workers in Ilorin South with approximately 1,003 workers. Through purposive sampling

technique, three sawmill factories in Ilorin South Local Government Area was selected based on the level of activities taking place in the three most patronized sawmill. Simple random sampling technique would be used to select 200 respondents for the study in a proportionate manner.

The research instrument that was used for this study is a researcher’s developed structured questionnaire tagged safe work practices and occupational health hazards prevention. The instrument consisted of two sections (A and B). Section A requested for the demographical information of the respondents while section B contains items used to elicit information on safe work practices and occupational health hazards prevention. The questionnaire was drawn on a four –point Likert rating scale. In order to ensure the validity of the research instrument, a draft of the researcher’s developed structured questionnaire was given to three (3) other experts in the area of study. Their comments, suggestions, and correction were carefully studied and used to improve the quality of the research instrument used for the study.

The reliability of the instrument was determined through the use of test re- test method in which

**Table 1:** Chi-square analysis on use of protective materials and occupational health hazards

S/N	ITEMS	SA	A	D	SD	ROW TOTAL	Df	CAL VALUE	TABLE VALUE	REMARK
1	Using nose guard practices in the factory prevents the workers from occupational health hazards	73 (36.5%)	81 (40.5%)	37 (18.5%)	9 (4.5%)	200				
2	Many sawmill workers do not make use of hand glove in their factories which leads to various health hazards such as amputation	51 (25.5%)	115 (57.5%)	27 (13.5%)	7 (3.5%)	200				
3	Eyes protection is affordable and very easy to purchase by sawmill workers thereby preventing occupational health hazards	34 (17.0%)	158 (79.0%)	3 (1.5%)	5 (2.5%)	200	9	153.65	16.92	Ho Rejected
4	The use of protective boot prevents sawmill workers from having tetanus	47 (23.5%)	61 (30.5%)	78 (39.0%)	14 (7.0%)	200				
<b>Column Total</b>		<b>205</b>	<b>415</b>	<b>145</b>	<b>35</b>	<b>800</b>				

P < 0.05 alpha level

a set of validated twenty (20) copies of questionnaires were administered to a set of respondents (Workers) who are not part of the main study in another study area in Ilorin South Local Government Area, Kwara State. The same of the questionnaire were re – administered was analysed, Pearson Product Moment Statistics was used to analyse the instrument collected. A correlation coefficient of 0.80r was obtained, which shows that the instrument was reliable. The completed questionnaire was collected, sorted, coded and analyzed, using descriptive statistics of frequency counts and percentage for demographic data of the respondents while Inferential Statistics of Chi – square was used to analyse the data collected to test the hypotheses set for the study at 0.05 alpha level of significance. Statistical Package for Social Science (SPSS) Version 20.0 Software.

## 6. Results

**Hypothesis 1:** Use of protective materials (hand gloves, nose guard, and boot) will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

The findings from the analysis in table 1 indicated that the calculated chi-square value is 153.65 while the tabulated chi-square value is 16.92 with a degree of freedom 9 at 0.05 alpha level of significance. Since the calculated  $\chi^2$  value of 153.65 is greater than the tabulated  $\chi^2$  value of 16.92, therefore the hypothesis is rejected. This implies that the Use of protective materials will have significantly prevent occupational health hazards among sawmill

workers in Ilorin South Local Government Area, Ilorin.

**Hypothesis 2:** Use of warning signals will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin

**Table 2:** Chi-square analysis on use of warning signals and occupational health hazards  
P < 0.05 alpha level

S/N	ITEMS	SA	A	D	SD	ROW TOTAL	Df	CAL $\chi^2$ VALUE	TABLE VALUE	REMARK
1	It is very essential to have warning signs in all the sawmills as a means of preventing occupational health hazards (accidents)	57 (28.5%)	120 (60.0%)	20 (10.0%)	3 (1.5%)	200				
2	All the warning signals should be strictly followed in order to prevent occupational health hazards	70 (35.0%)	117 (58.5%)	9 (4.4%)	4 (2.0%)	200				
3	Warning signs prevent sawmill workers from the risk of occupational health hazard	15 (7.5%)	165 (82.5%)	17 (8.5%)	3 (1.5%)	200	9	59.333	16.92	Ho Rejected
4	Inability to follow warning signals leads to many occupational health hazards in the sawmill	68 (34.0%)	120 (60.0%)	7 (3.5%)	5 (2.5%)	200				
<b>Column Total</b>		<b>210</b>	<b>522</b>	<b>53</b>	<b>15</b>	<b>800</b>				

The findings from the analysis in table 2 indicated that the calculated  $\chi^2$  value is 59.333 while the tabulated  $\chi^2$  value of is 16.92 with degrees of freedom 9 at 0.05 alpha level of significance. Since the calculated  $\chi^2$  value of 59.333 is greater than the tabulated  $\chi^2$  value of 16.92, therefore, the hypothesis is rejected. This implies that the use of warning signals will significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

**7. Discussion**

Regarding the first finding, table 2 indicated that the hypothesis which stated that use of protective materials will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin. This table shows the

calculated Chi – square value of 153.65 with table  $\chi^2$  value of 16.92 at degree of freedom 9 at 0.05 alpha level of significance. Since the calculated value of 153.65 was found to be greater than the table  $\chi^2$  value of 16.92 at 0.05 level of significance. Therefore, the null hypothesis was rejected. This implies the use protective materials will significantly prevent occupational health hazards in Ilorin South Local Government Area, Ilorin. The result of this finding is in line with the view of Janssen (2003) who opined that the air quality of the work environment has a direct influence on the health of employees; ideal protective measures are to be used to control any sources of pollution and reduce the amount of pollutants entering the air supply. In addition, this finding is in line with Luchs (2005) who affirmed that protective gloves should be inspected before each use to ensure that they are not torn, punctured, or made

ineffective in any way. This finding is also in line with Roberto (2005) who opined that employers should ensure that the risk assessment they have to do by law includes risks to the feet as well as slipping risks, and if safety or special footwear is required they must supply it at no cost to the workers.

With respect to the second finding, table 2 indicated that the hypothesis which stated that use of warning signals will not significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin. This table shows that the calculated  $\chi^2$  value of 59.333 is greater than the table  $\chi^2$  value of 16.92 at 9 degrees of freedom (df) and at 0.05 level of significance, the null hypothesis thereby rejected. This implies that use of warning signal will significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin. These finding is in line with Khan (2003) who opined that here a hazardous substance is used, handled or stored in a place of employment, signs shall be posted in conspicuous places warning every person of the hazardous substance and if any precaution to be taken to prevent or reduce any safety or health risk. Also, Reiner (2008) affirmed that permanent signboards should be used for prohibitions, warning, mandatory requirement and the location of emergency exits and first aid facilities.

## 8. Conclusions

Based on the findings from the study, the following conclusions are drawn:

Use of use of protective material will significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

Use of warning signals will significantly prevent occupational health hazards among sawmill workers in Ilorin South Local Government Area, Ilorin.

## 9. Recommendations

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

- Seminars, workshops, conferences should be organized to enlighten the sawmill workers on the importance of use of protective materials in the sawmill
- Health educators should enlighten the sawmill workers on the importance of using warning signals as it prevents occupational health hazards.

## References

- Alli, B.O. (2008). *Fundamental Principles of Occupational Health and Safety*. Geneva: ILO
- Aswathappa, K. (2004). *Human Resource and Personnel Management: Text and Cases*. (3rd ed.). New Delhi: Tata McGraw–Hill Publishing Company Limited, (Chapter 20).
- Annaah (2004) *Human Resource and Personnel Management: Text and Cases*. (3rd ed.). New Delhi: Tata McGraw–Hill Publishing Company Limited, (Chapter 20).
- Coyle, J., & Leopold, J. (2002) *Health and Safety Committees - How Effective Are They?*, *Occupational Safety and Health*, November, 20-22.
- Denisi, A. S., & Griffin, R. W. (2005). *Human Resource Management*. (2nd ed.). Boston: Houghton Mifflin Company, (chapter 15).
- Eisner, H., & Leger, J. (2001) *The International Safety Rating System in South African Mining*, *Journal of Occupational Accidents*, 10, 141-160.
- Emeharole, P.O. & Iwok F. E. (2008). *Occupational Stress Induced Health from World Wide Web*: <http://www.dasonline.com/IMASPPEREquirementsDDAS.htm>
- Guidotti, T. L., ed. (2011). *Global Occupational Health*. New York: Oxford.
- Hall, D., & Goodale, J. (2003). *Human Resources Management: Strategy, Design, and Implementation*. Illinois: *Forman and Company*, (chapter 23).
- Hämäläinen, P., Takala, J., Saarela, K. L. (2006). “Global Estimates of Occupational Accidents”, in *Safety Science*, Vol. 44, pp. 137–156.

- Hattingh, S & Acutt, J. (2003). Occupational Health: Management and Practice for Health Practitioners. Juta. Cape Town
- Hippocrates, A. (2006). *Health in Organizations*. New York: McGraw-Hill Inc, (chapter 12).
- Huggin, K A. (2001). Infection Control Today. 2001. [On-line]. Retrieved 24/02/2003
- ILO 2003, Standards-related activities in the area of occupational safety and health, Report VI, International Labour Conference, 91st Session. Available at: <http://www.ILO.org/public/english/protection/safework/integrat/survindex.html>
- ILO, (2005). Safe Work. Global estimates of fatal work-related diseases and occupational accidents, World Bank Regions.
- ILO. (2005). *National Health Policy and Strategy to achieve Health for all*. New York: ILO Publishers, (chapter 16).
- Janssen, L. Hatting, P.A. (2003) "The use of respirators to reduce inhalation of Airborne Biological Agents" Journal of occupational and Environmental Hygiene (Just - accepted)
- Khan (2003) Building Healthy Workplaces: What we know so far. *Canadian Journal of Behavioural Sciences*, 37, 223-235.
- Kotze, A.J. (2002). Occupational Health for the Nurses and other Health Workers. 3<sup>rd</sup> ed. Juta & Co: Cape Town.
- Kreitner, R. (2007). *Management*. (10th ed.). Boston: Houghton Mifflin company, (chapter 23).
- Kumar, R. 2005. Research Methodology. Sage Publications: London
- LaMontagne, A D., Barbeau, E., Youngstrom, R A., Lewiton, M., Stoddard, A M., McLellan, D., Wallace, L M., Sorensen, G (2004) Assessing and Intervening on OSH Programmes: Effectiveness Evaluation of the Wellworks-2 intervention in 15 manufacturing worksites *Occup Environ Med.*, ;61:651–660. doi: 10.1136/oem.2003.011718
- Lucas, O. (2001). Health and Safety Policies. London: McGraw – Hill Inc, (chapter 21).
- Nayar, A. (2005). Education and Health. New York: Pergamon
- Occupational Safety and Health Administration (OSHA) (2009) Fact Sheet. U.S Department of Labor. [On-line] Retrieved 15/09/2009 from World Wide Web. <http://www.oshaslc.gov/SLTC/constructionppe/index.html> Problems: The Scene Among Employees of EssienUdim LGA. Akwalbom. Proceedings of NAHE Conference.
- Reiner (2008) Merging Strategic Safety, Health and Environment into Total Quality Management, *International Journal of Industrial Ergonomics*, 16 (2), 83-94.
- Rogers, B. (2003). Occupational and Environmental Health Nursing: Concepts and Practice. 3<sup>rd</sup> ed. W.B Saunders: USA.
- Safety and Health at Work (2013) Wellbeing at Work: Creating a Positive Work Environment, *Publications Office of the European Union*, ISBN: 978-92-9240-039-2 doi:10.2802/52064
- Stack and Elkow (2001) Safework-in-focus Programme on Safety and Health at Work and Environment. Geneva: ILO Office. Press.
- Viaene, J. (2003). Organization of Accident Prevention within the Enterprise. Proceedings of the Ninth World Congress on the Prevention of Occupational Accidents and Diseases. Amsterdam.
- WHO (2007) Raising Awareness of Stress at Work in Developing Countries Protecting Workers' Health Series No. 6; WHO Press, Geneva, Switzerland