

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY KUMASI**

**SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF COMMUNITY HEALTH**

**Evaluating Health and Safety Practices In Sawmills: The Case of Naja David Veneer
and Plywood (NDVP) Ltd., Kumasi**

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**A Dissertation in Partial Fulfilment of the Requirements for the Award of the Master
of Science in Health Services Planning and Management Degree**

By:

STEPHEN BENYASEH ALEWABAH

2004

DECLARATION

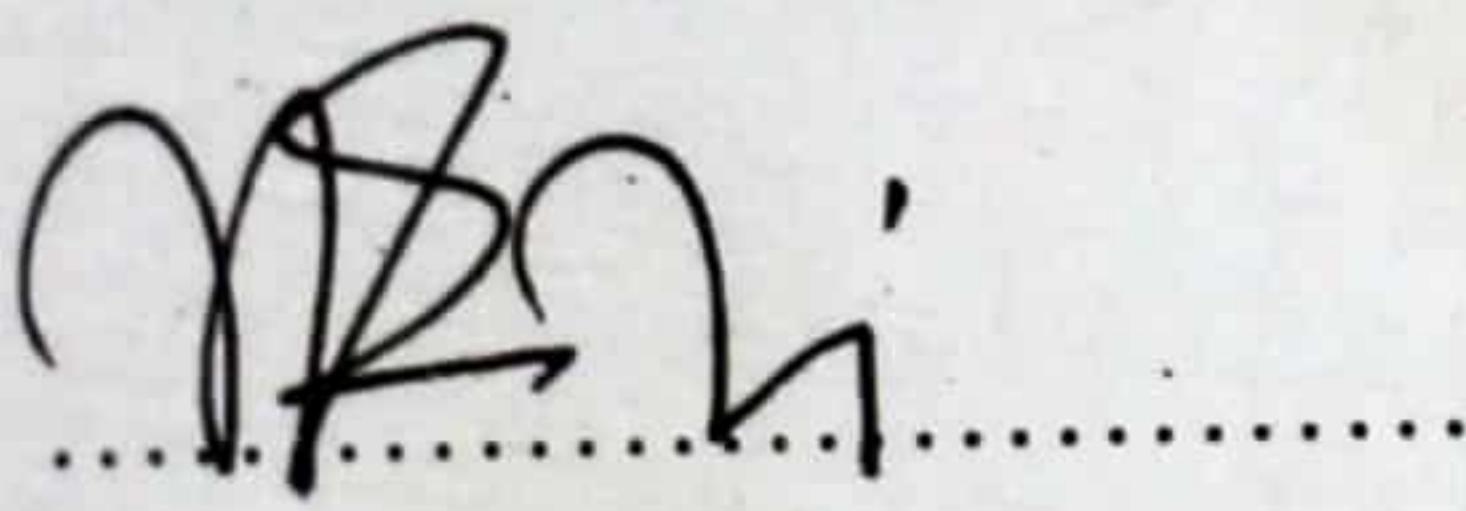
I Stephen Benyaseh Alewabah hereby declare that this thesis was prepared and submitted by me. I wish to indicate that no previous submission for a degree has been done here or elsewhere. Also work of others that served as source(s) of information have been duly acknowledged by making references to the author(s). I therefore accept sole responsibility for mistakes or errors in this work.



Signature

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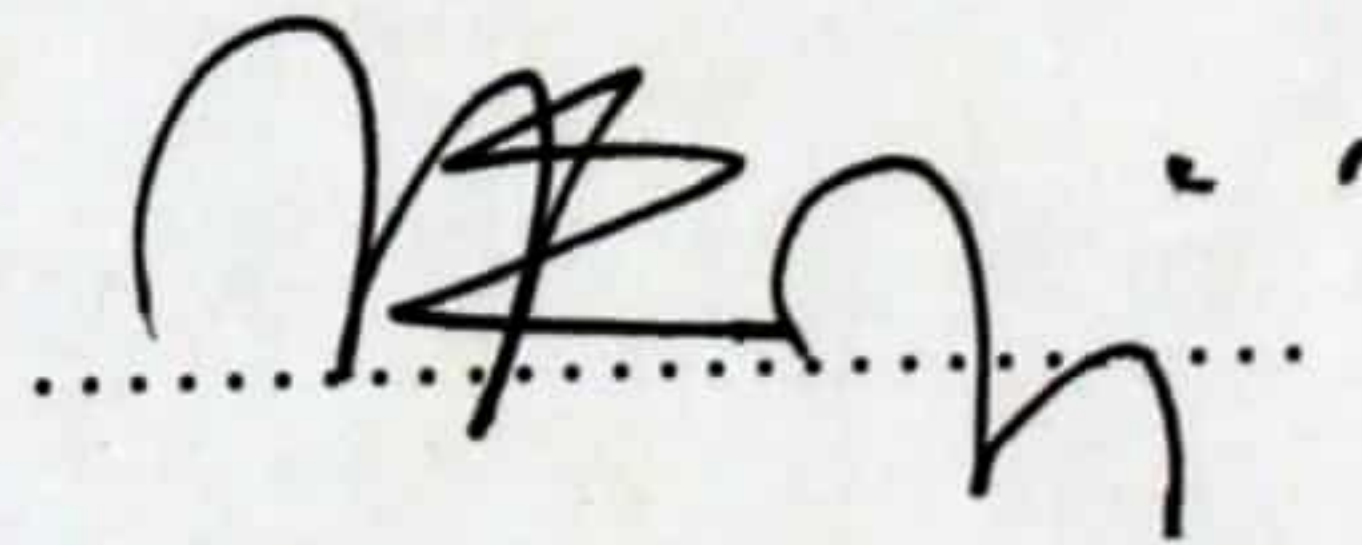
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DEDICATION

I dedicate this dissertation to my wife Mrs. Peace Alewabah and my parents Mr. Kwaku

Alewabah and Madam Adwoa Donkor

ACKNOWLEDGEMENT

I am thankful to God Almighty for His protection, guidance, divine love and mercies granted me.

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LIST OF ABBREVIATIONS/ACRONYMS

BAT	-Best Available Technology
BOP	-Best Operation Practices
BPEO	-Best Practical Environmental Options
EIA	-Environmental Impact Assessment
EPA	-Environmental Protection Agency
EMP	-Environmental Management Plan
EU	-European Union
GHS	-Ghana Health Services
GNP	-Gross National Product
HSE	-Health safety Executive
HSWA	-Health and safety at Work Act
ILO	-International Labour Organisation
KMA	-Kumasi Metropolitan Assembly
MOH	-Ministry of Health
NDVP	-Naja David Veneer and Plywood

OC	-Occupational Accident
OH	-Occupational Health
OHS	-Occupational Health and safety
OWRP	-Obvious Waste Reduction Plan
RIDDOR	- Reporting of Injuries, Diseases and Dangerous Occurrence Regulation
SPSS	-Statistical package for Social Sciences
TURERA:	-Trade Union Reform and Employment Rights Act
WISE:	-Work Improvement in Small Enterprise
WHO	-World Health organisation

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ABSTRACT

Occupational accidents have been causing mortality, disability and diseases. Despite the effort made by the industrialised countries during their 150-year period of industrialisation, occupational accidents are still among the most severe epidemics of modern society.

In the 15 European Union countries, for example, 5 million occupational accidents occur each year, leading to 6,000 fatalities. According to the estimates of Dr. Jukka Takala of the ILO, the toll of the world's total accident burden is much higher, 250 million accidents leading to 335,000 fatalities occur each year. The problem of occupational accidents corresponds in scale to the most serious epidemics of communicable diseases such as malaria and tuberculocosis.

Even though occupational accident is still very high especially in developing countries including Ghana, however, information on occupational accident and its impact on the overall quality of life are not sufficient. In the light of this, this study was done to evaluate the health and safety practices in NDVP Ltd. at Kaase, Kumasi.

The objective of the study was to identify those factors that are responsible for occupational accidents, the effect of these accidents on individuals and organisations, the training policy of the company, the culture of the company. Recommendations would be given on how occupational issues could be handled. The study was also to identify whether management and staff of NDVP adhere to health and safety practices.

A descriptive study with cross-sectional design was used for the study. A total number of 100 respondents from NDVP were purposively selected for the study comprising 80 junior staff and 20 management staff. Interview, observation and questionnaires were used as instruments to collect data for the study.

The findings of the study showed that;

Problems that hampered smooth execution of safety procedures included cost, insufficient space, ignorance/negligence on the part of staff, non-adherence to safety rules and lack of experts.

There was no scheduled maintenance of equipment and machinery but rather maintenance was only carried out when a machine breaks down.

Employees were not involved in any decision that is made in relation to health and safety.

Appropriate recommendations have been made to the management of the company (NDVP Ltd.) specifically and operators of sawmills in general to help improve on the health and safety practices in our Ghanaian sawmills towards reducing accident rates.

Some of the recommendations were;

Production planning should capture the strong seasonal trends of accidents in production scheduling and institute preventive programmes to minimise accidents in the company.

There should be safety audits and inspections in the Processing and Maintenance Sections of the company.

Intensive and aggressive educational programmes need to be embarked upon to deal with social factors and attractions that lead to increase in sawmills accidents.

Management should punish workers who do not comply with safety guidelines and provisions.

The company should discourage the employment of casual workers.

Management or employers should provide all the necessary safety tools and equipment.

In conclusion, it was realised that the culture, inadequate safety policy, lack of effective safety training were the factors that were highly responsible for accidents in the company.

CHAPTER ONE

Evaluating Health and Safety Practices in Sawmills: The Case of Naja David Veneer and Plywood Ltd.

1.0 Background

Today's world is full of new industries, occupations technology and professions. Along with them come the production and creation of new industrial materials, production methods, commercial products and industrial wastes. Many of these have come with different levels of hazards, risks and problems.

In the recent past, little or no attention has been paid to health and safety of workers resulting in disability, or death of many employees as a result of accident(s) that can be prevented. Many employers lay little emphasis on health and safety at work place thereby making the workplace a dangerous place.

According to Murray and Lopez (1996) the development of health and safety issues came into being as a result of alarming rates of work related injuries and deaths. In Great Britain, studies have indicated that 350 people are killed, 1.5 million suffer injuries and 2 million suffer work-related ill health, 3.9 million working days are lost and employers pay over £750 million on insurance a year Murray (ibid). Ghana cannot be left out, available figures at the department of labour indicated that occupational related deaths reported and recorded from 1997 to 1999 was 75, while 1622 suffered work injuries. It must also be accepted that these figures are under-estimated as most employers fail to report such incidents and accidents.

Despite the fact that companies do not give accurate figures or data of accidents at work place, Milkovich and Boudreau (1991:517) concede that every manager and employee want a healthy and safe work environment.

Most organizations fail to protect their workers fully as part of cost cutting measures which finally result in numerous accidents at workplace, leading to both permanent and temporary incapacitation or otherwise.

In spite of globalization, change in technology and the creation of awareness, the Ghanaian wood worker still faces health and safety hazards such as excessive heat, dust, noise, exposure to dangerous equipment, spillage etc.

The above state of events can be attributed to the non-enforcement of existing occupational health and safety laws and government's inability to ratify International Labour Organisation (ILO) Conventions 155, 161 which are about occupational health and safety.

In reaction to this problem of non-adherence to health and safety provisions, developing countries have tried to set up occupational and environmental health units to oversee, manage and help with the legislation of the work of industry and their effects on environment and human health. Most small-scale enterprises do not have an understanding of health and safety and therefore do not make provision for safety units and measures.

Ghana started work in occupational safety and health over thirty years ago. The Environmental Protection Agency (EPA), Ministry of Environment, Science and Technology (MEST) and the Inspectorate Division of the Ministry of Manpower Development and Social Welfare have existed for varying periods. Recently (1995-1996), the Ministry of Health/Ghana Health Services has set up a unit for occupational and environmental health. The role of this unit is to undertake research in collaboration with relevant organisations and develop policy and legislation with these relevant organisations for health and safety of all workers in Ghana.

It is therefore imperative and essential that companies have efficient health and safety service for their employees, to promote and maintain the highest degree of physical, mental and social well being of all employees by identifying, evaluating and controlling the level of hazards in the working environment.

Occupational health is concerned with two-way relationship between health and work. It is concerned with how the working environment affects the health of the worker and also covers how the state of health of the worker influences his or her ability to perform the work for which the worker was employed.

The provision of a good occupational health service requires the co-operation of all sectors of the workforce, the employers and the government.

Ghana a developing country in Sub-Saharan West Africa has a population of about 18.3 million and an average growth rate of 2.7% per annum (2000, census). The agricultural sector is the largest economic sector accounting for 60% of the workforce.

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Other sectors employing large numbers of working persons are commerce, manufacturing, mining and services.

As in many other developing countries, the last three or four decades have seen an increase in the rate of industrialisation in Ghana. This began in the early years after independence in 1957 when the government of the day embarked on an accelerated industrialisation programme. Similarly, some expansion occurred in the traditional occupational sectors like agriculture and the sub-sectors. These developments have brought with them attendant health and safety problems in the workplace, which require occupational health and safety services. These services, however, have not kept pace with the growth and development in the industrial and other sectors in Ghana.

Apart from a few multinational companies, which provide a whole range of health services to their staff, comprehensive occupational health services are not the norm in Ghana. Most companies aim at providing care for ill health but ignore the preventive aspects of these problems.

There are many characteristics of the environment and living conditions in Ghana, which are important determinants of the type and severity of hazards working persons are exposed to, and consequently, their occupational related health problems. Many of these conditions are not limited to Ghana, but are relevant in the West African sub-region and indeed in most of Sub-Saharan Africa.

Some of the most important characteristics are; the landmass of Ghana is dry and hot, the coastal areas are hot and humid, both conditions create physiological hazards in addition to those created by the physical and chemical hazards of industries.

Many factors account for the endemicity of many diseases in Ghana. These include;

Inadequate education and illiteracy , lack of adequate sanitation at the workplace, poor personal hygiene, non -adherence to health and safety policies and practices and non adherence to health and safety laws.

Comprehensive Occupational Health Services are recommended by International Labour Organisation (ILO) Recommendation 161 for every country. An occupational health service should include;

Risk assessment, control of exposure to hazards, medical surveillance, health and safety education, treatment of work-related ill health and injury, rehabilitation of the injured and compensation of employees incapacitated as a result of work related injury or diseases.

The responsibility of occupational health and safety in Ghana is vested in government ministries. These ministries include Manpower Development, Mines and Energy, Lands and Forestry, and Social Welfare. However, every ministry has a role to play to help promote health and safety of workers.

The problems affecting the evolution of Occupational Health and Safety in Ghana are numerous and serious. Effective promotion of OHS in Ghana is hampered by many constraints such as;

Lack of safety training facilities, inadequate budgetary allocation and lack of good pension for workers who suffer as a result of occupational accident.

1.2 Problem Statement

An increase in life expectancy depends on decreases in mortality rates as well as health related burden. Occupational accidents have been causing mortality, disability and diseases. Despite the effort made by the industrialised countries during their 150-year period of industrialisation, occupational accidents are still among the most severe epidemics of modern society.

In the 15 European Union countries, for example, 5 million occupational accidents occur each year, leading to 6,000 fatalities. According to the estimates of Dr. Jukka Takala of the ILO, the toll of the world's total accident burden is much higher, 250 million accidents leading to 335,000 fatalities occur each year. The problem of occupational accidents corresponds in scale to the most serious epidemics of communicable diseases such as malaria and tuberculosis. Prevention is the only sustainable strategy for controlling the accident epidemic. Some countries have demonstrated very effective accident prevention programmes. For example, in the 20-year period of 1973 to 1993, Finland was able to reduce the number of accidents by 68%, while in Sweden, the development was even more positive (an 85% reduction in fatal accidents between 1955 and 1995 and a further reduction of 72% between 1975 and 1995). On the global scale however, declining trends are likely to happen with specific global preventive programmes aiming at increasing awareness and to disseminate information of good prevention practices, including demonstration of their effectiveness, Takala Jukka (1998).

In trying to find the most effective options, several research institutions and research groups have experimented with accident prevention methods. According to the present understanding, safety should be seen as an essential element of the company's overall strategy. This entails the inclusion of safety in total quality management systems, the introduction of risk assessment practices and the innovation of comprehensive safety programmes based on well-proven preventive measures.

The role of legislation is also important. The European Union Framework Directive on Occupational Safety and Health, for example, requires each employer to carry out a systematic risk assessment at the workplace and draw up a safety programme for preventing accident hazards. Providing workers with training and information pertaining to hazards and safe working practices is also required. Such stipulations work well in larger well-organized industries, but their impact is less evident in small-scale enterprises, among the self-employed and in the informal sector, which often is not covered by any safety service or inspection.

To achieve such an objective would require a two-way strategy. First, to make safety an everyday practice in each work task and at each workplace, and second, to concentrate special intervention to high-risk sectors and occupations, such as agriculture, mining, lumbering, fishery, construction, manufacturing industry, and transportation.

According to ILO and WHO estimates, every year more than 12 million people die of work-related diseases and accidents, more than 160 million workers fall ill each year owing to workplace hazards.

According to the 2004 Annual Report of Kumasi District Labour Office, 154 accidents were reported and out of this total number 97 were from the wood processing sector representing 63% of the total accidents and the total compensation paid within the same period was approximately ₵521,865,440. While in 2003 from July to December 94 accidents were reported and recorded out of this number 61 representing 65% were from the sawmills and the total compensation paid was ₵251,565,333.33. So studying the above figures closely indicate that there is still a problem of accidents as far as the wood-processing sector (sawmills) is concerned. The available records also indicate that occupational accident is actually draining companies of their financial resources hence a major setback for development.

Studies also indicate that occupational and domestic accidents were amongst the six top diseases in the Kumasi Metropolis in 2003 (Kumasi Metropolitan Health Directorate Report, 2003)

In the wood industry in Ghana, the fatal accidents recorded between the years 1987-1993 were 21 representing 57% and between the years 1995-1998, were 16 cases representing 43%. (GHS/MOH, 2002)

In Naja David Veneer and Plywood Ltd, the situation is no different. Personal communication with the Administrative Manager of the company and reviewing of records showed that the number of accident related injuries increased from 287 in the year 2001 to 384 in 2002 and a further increase to 392 in 2003. Despite all the efforts put in place to curb the incident of sawmill accidents, the number of accident related injuries is still on the increase.

In the light of the above therefore, this research was undertaken with the view to finding solution to the seemingly increasing work related injuries in the Company (NDVP Ltd.) in particular and sawmills in general.

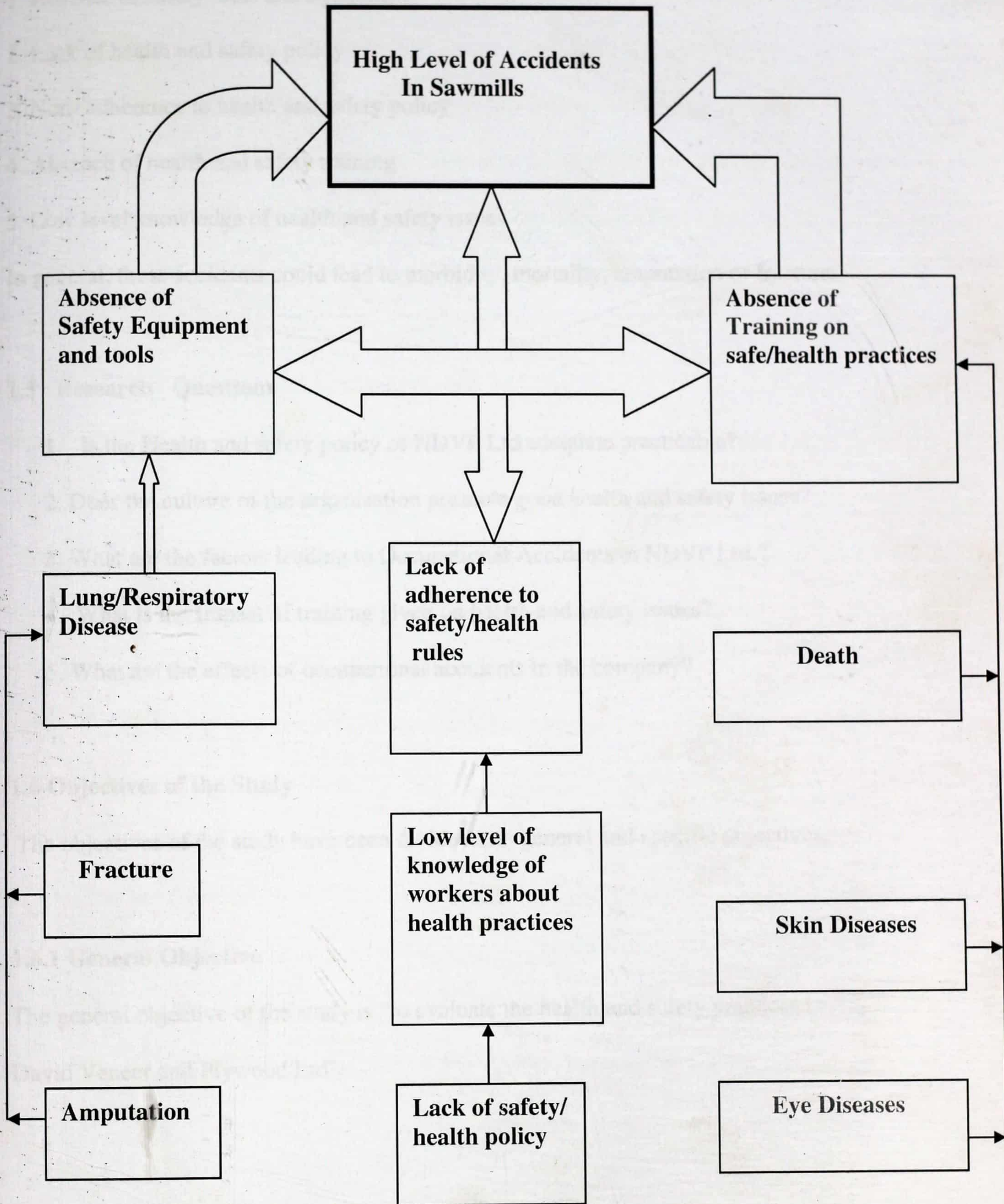
1.3 Rationale for the Study

Occupational Accident is a horrific and tragic health problem. Management of seriously injured victims consumes scarce resources in terms of time and money. The study therefore is to bring to light some of the good occupational practices that promote health and safety at the workplace in general and specifically in sawmills where the study was conducted

Ghana has a developmental goal of becoming a middle level income country by the year 2015. To achieve this goal, it is very important that the threat of occupational accident is seriously addressed. It has been realised that occupational accidents lead to pre-mature deaths, morbidity, low productivity and financial consequences on the part of the individual and the organisation. As a result of this, it is therefore important to research into the issue of health and safety practices in sawmills where a good number of Ghanaian workers are employed. The research findings could therefore help to come out with some recommendations to help promote good occupational practices in sawmills to reduce accidents or injuries. One cannot rule out the fact that much work has already been done in finding solution to occupational accidents. However, available figures reported at NDVP Ltd and the Labour Department in Kumasi in relation to sawmill accidents are still high and alarming, it is therefore of importance for a study to be carried out in this area to help look for alternative solution(s) to the problem.

The researcher is of the fervent view that, the results or findings of the study will provide a case for strategic planning to help curb the incidence of sawmill accidents or work-related injuries. The study will therefore help workers and managers alike to know their responsibilities in relation to how to promote health and safety practices at the work place (sawmills). It is also

1.4 Conceptual Framework



Source: Author, 2004

Sawmill accidents could be attributed to several factors. These factors include;

1. Absence of safety tools and equipment
2. Lack of health and safety policy
3. Non- adherence to health and safety policy
4. Absence of health and safety training
5. Low level knowledge of health and safety issues

In general, these accidents could lead to morbidity, mortality, amputation or fractures

1.5 Research Questions

1. Is the Health and safety policy of NDVP Ltd.adequate practicable?
2. Does the culture of the organisation promote good health and safety issues?
3. What are the factors leading to Occupational Accidents in NDVP Ltd.?
4. What is the Impact of training given on health and safety issues?
5. What are the effects of occupational accidents in the company?

1.6 Objectives of the Study

The objectives of the study have been divided into general and specific objectives;

1.6.1 General Objective

The general objective of the study is “to evaluate the health and safety practices in Naja David Veneer and Plywood Ltd”.

1.6.2 Specific Objectives

1. To review the content of the health and safety policy of the company
2. To determine the factors leading to occupational accidents.
3. To determine the effects of the organisation's culture on health and safety.
4. To assess the nature of health and safety training in the organisation.
5. To review the effect of occupational accidents on the individual and the company.

1.7 Profile of the Study Area

1.7.1 Background Information of the Company

Naja David Veneer and Plywood Ltd was established in 1952 formally as sawmills wood processing company, which specialises in the production of round logs and sawn timber for export and local consumption. It started commercial production in July 1952 with the most modern machinery and equipment at the present Asokwa Industrial area. However, with increasing demand for plywood and rotary and veneer products, it went into the processing of these products with the most modern equipment and machinery amongst its competitors.

NDVP Ltd. is sited in Kumasi, the Ashanti Regional capital of Ghana. The core operation of the company is the production of veneer and plywood.

Kumasi has a total projected population of about 3,708,800 (2000, Census). The region is found between longitudes 0.15 degrees to 2.25 degrees West and latitudes 5.5 degrees to

7.40 degrees north. The size of the region is 24,390 square kilometres, which represents 10% of the total land area of Ghana.

The company produces plywood for both the domestic and the international markets. However, supply to the international market is more than the domestic market. Since the company is one of the companies that is registered with the Free Zone, the company by law should not sell more than 30% of its produce on the local market

Naja David Veneer and Plywood Ltd, a wholly Ghanaian company was incorporated in Ghana under the Company Code, 1963 (Act 179) on the 26th March 1965 and commenced business on 13th September 1965. The main raw materials used in the company's production process are logs and imported hardeners, locally manufactured floor and water. The factory has a total installed capacity of 150 cubic metres of lumber per day. The workforce of the company stands at 1,227 of which 68 are senior staff members.

Towards the 1980s, raw material supply became scarce and the sources dwindled, competition became very keen for the main raw material (that is the log) as a result of this the shareholders realised that; there was the need for them to inject fresh capital into the business. Therefore, Naja David Veneer and Plywood Ltd. which had already associated itself with the processing of wood joined forces together with other sister companies from the group of companies with the primary aim of pooling resources to ensure efficiency and maximum utilization of the wood crop.

In 1990 the company invested over ₵18 billion into its modernisation and expansion programme with the aim of increasing not only production but maximising raw material usage especially the wood crop and to reduce waste generation through reuse and recycling

in order to reduce the impact of its activities on the working and neighbouring environment.

1.7.2 Vision Statement of NDVP

The vision of the company is to produce high quality veneer and plywood.

1.7.3 Legal Obligations for Environment Management Plan (EMP)

The PNDC Law 116 establishing the Ghana Investment Code of 1985 requires that, the Ghana Promotion Centre, which is the government agency for the encouragement, promotion and co-ordination of private investment in the Ghanaian economy must in its appraisal enterprises...have regard to any effect the enterprise is likely to have on the environment and the measures to propose for the prevention and control of harmful effect to the environment.

The EPA Act 1984 (490) and the Environmental Assessment Regulations, 1999 (LI 1652) mandates the agency to ensure that investment comply with laid down environmental impact Assessment (EIA) procedures in the planning and execution of projects, including compliance with existing projects.

1.7.4 Specific EPA Guidelines for the Food and Wood Industries

- Forestry and Wildlife Policy 1994; The Forestry Development Master Plan 1996;
- Timber Resources Management Act, Act 549; The revised logging manual and the Forest Service Bill 1998 which regulates the utilisation, management, development and conservation of natural resources including forest and wildlife resource.
- Timber and Timber Ordinance, No. 20 of 1949 (Cap. 158) regulates and controls the timber trade through the registration and issuance of property marks to concession holders and the issuing of licenses and permits for the felling of forest trees.
- Tree and Timber (control of cutting) Regulations act 1950 protected Timber Lands Act, 1959 (Act 34).
- Timber Industry and Ghana Timber Marketing Board Decree 1977 (SMCD 128)

1.7.5 Impact Minimisation and Mitigation Measures

Naja David Veneer and Plywood Ltd. has been committed to minimising the impact of its operations on the environment. Naja David Veneer and Plywood Ltd. recognising these facts incorporated environmental pollution control through re-use, recycling and waste minimisation systems in the modernisation of its operations.

Recently the management of NDVP Ltd. in collaboration with Advanced Wood Products Ltd. a member of the group of companies has also helped to install the latest state-of-the-art plymill, which is fully automated for manufacturing of high quality plywood from other waste materials, such as pieces of veneer and sawdust.

1.7.6 Specific Objectives for the Production of the EMP

- To develop, identify and train all management, workers, and contractors on the stewardship on all environmental, health and safety matters and ensure that their activities meet existing standard
- To set aside an environmental investment budget for environmental issues
- To monitor regularly and carry out environmental audit to ensure compliance with stated objectives.
- To assess any environmental conditions of the company's operations and minimise its effects through the application of the best available technology.
- To co-operate with government agencies in drawing up standards.

To meet the set objectives, the following activities were undertaken by management;

- Drawing of training timetable to meet specific categories of staff found in the factory
- Investigation of all accidents
- Constant inspection to adhere to health, safety and environmental control programmes.
- Regular monitoring of utilities usage.
- Review of job procedures to ensure safety.
- Annual environmental auditing, using existing standards.
- Provision of free medical services to workers, spouses and children under age 21.
- Regular medical examination, e.g. spirometric and audiometric.
- Mandatory use of protective clothing.

1.7.7 Corporate Policy on Environment, Health and Safety

It is NDVP Ltd's. Objective to protect the health and safety of its employees and para-employees and also limit any adverse effect of its operations on the physical environment.

1.7.8 Environmental Policy

The management of NDVP Ltd. is committed to the operation of the veneer and plymill plants:

- a. To reduce land degradation and damage to the forest through sustainable management of its concession.
- b. To minimise or prevent potential release of waste or pollutant into the workplace environment as well as the external environment.
- c. To mitigate against potential impact through the application of the principle of Obvious Waste Reduction Plans (OWRP), Best Operation Practices (BOP), Best Practical Environmental Options (BPEO), and Best Available Technology (BAT).
- d. To ensure meeting of regular legislative guidelines for emissions, effluents and solid waste disposal.
- e. To educate supervisory management to enforce compliance of employees to the commitment of the environmental action plan of the mills.
- f. To monitor and control effluents discharges into the Asokwa industrial area drainage system which eventually empties into the catchments of the Subin River.

g. To install and operate pollution control equipment to ensure maximum operating efficiency and minimisation of potential impact of noise nuisance at the workplace and efficient extraction of sawdust and particulate from the workplace environment.

In order that;

- a. The company shall operate in an environmentally friendly manner;
- b. The operations shall comply with the regulatory or legal requirement for the emission/effluent discharge and solid waste discharge to meet EPA standards or guidelines for effluent discharge into fresh water bodies;
- c. The company can achieve some economic benefits in prevention and mitigation programmes on the basis of principle of pollution prevention pays;
- d. To build a good image of the company within the community of consumers and regulatory agencies.

1.7.9 Occupational Health and Safety Policy

The management of NDVP Ltd. shall ensure the education of management, employees and supervisory management on occupational health and safety policy and regulations.

In a way to;

- a. To ensure identification, prevention and minimisation of potential industrial hazards in the work environment including noise nuisance, fumes and particulate;
- b. To prevent or minimise exposure to potentially hazardous and irritating raw materials during handling;

- c. To achieve employee commitment to safety in the use of protective clothing through awareness creation of potential hazards by education and training to understand Potential Material Safety Data Sheet (MSDS) of the raw materials;
- d. To get supervisory management compliance to safety as basis for compliance enforcement of safety regulations in the plants;
- e. To educate management and employees in order to create awareness of the potential impact of releases into the environment and the implications when such releases exceed the permissible limits.

In order that;

- a. The working environment shall be improved to ensure employee safety.
- b. Employee will be committed to the use of protective clothing in all identified areas requiring it.
- c. Potential accidents shall be avoided or minimised to ensure employee and equipment safety.
- d. Enforcing regular medical monitoring and keeping of environmental health records on employees for effective identification and detection of potentially hazardous areas.

Source: NDVP. Ltd. Business/ Company Policy, (2000)

1.8 Scope of the study

The study looks at health and safety practices in sawmills. The specific case of NDVP Ltd. has been chosen to find out some specific problems that are bedeviling the industry.

For the purpose of this, evaluation of the company has been done using the specific objectives above. Other areas of concern have not been considered in this work.

1.9 Limitations

The whole of sawmill companies in Kumasi or in Ghana would have been studied to help make the study more representative. However, as it has been stated earlier Naja David Veneer and Plywood Ltd. was used as the case for the study and this might not represent the situation of other companies in the metropolis and Ghana at large. The use of Naja David Veneer and Plywood Company Ltd. only as a study area has been necessitated as a result of financial constraints, limited time available and material resource constraints.

The most difficult challenge to the study was the administration of questionnaires since most of the workers were not prepared to answer the questions for reasons best known to them. Notwithstanding that challenge there were other challenges like management unpreparedness to allow the researcher to carry out the study at the place, difficulty in getting records for reviewing purposes and staff not prepared to be interviewed.

1.10 Assumptions

- The questionnaires designed were enough both in quality and quantity to collect the desired data.
- The answer given by the respondents were a true reflection of the situation on the ground.
- The responses from respondents were properly handled and analysed.

- The charts and tables used in the analyses were properly represented.
- The recommendations made would be useful when applied or implemented.
- The duration of the study was enough to help produce quality work.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definitions and Concepts

Accident is defined in many ways by different bodies; however for the purpose of this work the definition of the Ghana Employers Association has been adopted. It is defined as any undesired or unplanned event that results in harm to the people, damage to property or environment or loss of process

Occupational Health (Industrial Hygiene) is that science and art devoted to the anticipation, recognition, evaluation and control of those environmental factors or stresses arising in or from the work place, which may cause sickness, impaired health and well being or significant discomfort among workers or citizens of the community (NOSA manual 2000).

Occupational safety on the other hand is the physical investigation and evaluation of the work place conditions and equipment as well as work procedures to determine the weakness and potentials to cause accidents and devising remedial measures to rectify the situation such as training and re-training of employees, re-designing of jobs to diminish hazard conditions and regular monitoring. (Milkovich and Bondreau, 1991).

Several definitions of Occupational Health and Safety and Occupational Health Services have been produced by Professional Bodies, International Organisations, such as WHO and ILO and National Bodies and Authorities. If one summarises those definitions, Occupational Health is considered to be a multidisciplinary activity aiming at:

-Protection and promotion of health of workers, preventing and controlling of occupational diseases and accidents and eliminating occupational factors and conditions hazardous to health and safety at work.

-Development and promotion of healthy and safe work environment and work organisations.

-Enhancement of physical, mental and social wellbeing of workers and support for the development and maintenance of their working capacity, as well as professional and social development at work.

-Enablement of workers the opportunities to live socially and economically productive lives and to contribute positively to sustainable development, (WHO, 1994).

In the light of the above definitions the key issues of health and safety are the recognition of hazards, identification of risk, monitoring to reduce occurrence.

Safety hazards are aspects of the work environment that have the potential of causing immediate violence, harm or even death.

Health hazards on the other hand, are aspects of the work environment that slowly and cumulatively (often irresistible) lead to deterioration of health. The person may develop a chronic or life threatening illness or become permanently disabled.

Ivancevich J.M. (1995) using the diagnostic approach to Health and safety highlights the nature of the task, employees attitude towards health and safety, economic conditions, influence of unions, management's goal and the government as crucial environmental factors that influence the success of a healthy and safe working environment for workers.

Accidents and ill health are costly to workers and their families and can also hurt companies because in addition to the cost of personal injuries, they may incur far greater cost from damage to property or equipment and lost of production.

These and other factors have brought to pre-eminence the issue of health and safety at the workplace. The issue of health and safety is a fact which management is required, whether it wishes or not, to give more attention to. Governments, Trade unions, Insurance Companies and the public increasingly demand that employers provide a safe and healthy environment, however, it must be noted that such a policy will require the participation of all the stakeholders so that it might provide a comprehensive measure.

2.2 Organisational Health and Safety Policy

A company safety policy is a document that normally contains the arrangement, organisation and procedures that form the safe system of work for the normal work task or process that prevails within the workplace or commercial enterprise.

The main objectives of health and safety policy are;

To specify that health and safety are management responsibilities ranking equally with responsibilities for production, sales, costs, and similar matters;

To indicate that it is the duty of management to see that everything reasonably practicable is done to prevent personal injury in the processes of production, and in the design, construction, and operation of all plant, machinery and equipment, and to maintain a safe and healthy place of work;

To indicate that it is the duty of all employees to act responsibly, and to do everything they can to prevent injury to themselves and fellow workers. Although the implementation of a policy is fundamentally a management responsibility, it will rely heavily on the co-operation of those who actually produce the goods and take the risks;

To identify the main board director or managing board director (or directors) who have prime responsibility for health and safety, in order to make the commitment of the board precise and provide points of reference for any manager who is faced with a conflict between the demands of safety and demands of production;

Employers of the workforce are under a statutory duty under the Health and Safety at Work Act, 1974 (HASAWA) to prepare and keep revised a written statement of health and safety policy.

There is an exception for very small businesses, however if one employs more than five people the one needs a health and safety policy.

The management of Health and Safety at Work Regulations 1992 (SI 1992 No 2051), Regs 3 and 4 also require that employers formally assess risks to their employees whilst at work. This includes making known to all employees, and first-aiders, the company procedures for dealing with all workplace accidents. Moreover, executives are personally liable for the implementation of safety procedures, safe systems of work and revision of safety policies.

Health and safety at work Act (1974) indicated that all employers are required to formulate and publish written statements of general policy with respect to health and safety of employees, the organisation and arrangement for carrying out the policy. Provisions are also to be made for policies to be regularly revised and for such revision to be communicated to staff.

According to the Act the written policy statement should follow a particular format. This includes;

-Every employer must prepare, and if necessary revise from time to time, a written statement of his general policy regarding the health and safety of his employees.

-In particular, the policy statement should refer to the organisation, in terms of the systems, for implementing the policy.

-It should name all directors and managers that are statutory duty holders and their responsibility.

The policy document should spell out employees' duties, and be backed by training courses, briefing sessions and in the case of new employees, a proper induction procedure.

It is also affirmed by Ivancevich (1995) that the success of health and safety programmes rest primarily on how well employees and supervisors co-operate with safety rules and regulations.

Ivancevich asserted that essentially a policy should consist of three parts, as follows:

-A general statement of intent: This should outline in broad terms the organisations overall philosophy in relation to the management of health and safety. It should also include reference to the broad responsibilities of both management and workforce.

-Organisation (people and their duties): This part should outline the span of control. The span of control should take into accounts a supervisor's ability and knowledge about health and safety management. It should indicate who is responsible for health and safety management, how accountability is fixed so as to ensure that delegated responsibilities are undertaken, how the policy implementation is monitored and other organisational features should include: individual job descriptions having safety content, and a management chart clearly showing the lines of responsibility and accountability in terms of health and safety management.

2.3 The Effects of NDVP Ltd.'s Culture on Health and Safety

Organisational culture could be described as the collection of traditions, values, policies, beliefs and attitudes that constitute a pervasive context for everything a group of people do and think about in an organisation (Laurie J Mullins, 1999) Culture is reinforced through the system of rites and rituals, patterns of communication and perceptions of psychological contracts. Norms are the accepted standards or attitudes in an enterprise. It is argued that a factor that plays a key role in shaping organisational culture is the action of certain key individuals in the organisation.

“Managers must understand attitudes because of their effect on work behaviour. By understanding how attitudes are formed and changed, managers can shape employees attitudes. Attitudes are learnt through observations of other employee and the way they are re-enforced. The immediate work environment includes the attitudes and actions of peers and supervisors, and the climate they create. Thus the right climate for health and safety must be spearheaded by the actions of top management”.

Most accidents are caused by various forms of neglect such as careless use of machines or tools, failure to wear protective clothing, taking risks, inconsideration for nearby colleagues, lack of concentration or failure to use safety devices. All these faults amount to poor attitude towards safety. Improving poor safety attitudes hinges upon human relations and the supervisor's ability to create a team spirit that encourages employees to work safely. The supervisor must set the tone of safety consciousness by insisting on complete checks and correct methods of working at all times.

It was asserted by ILO in 1990 that where the relatively stable shared values (culture) of the organisation is such that safety procedures, methods, guidelines, rules regulations and standards are not adhered to, there is that possibility of such a practice leading to or fuelling accidents in that organisation. This is to say that one of the promotable factors of occupational accident in sawmills is the culture of the organisation. (That is the way of life of the people in the organisation)

To ensure success or effectiveness, appointment of a high-level safety officer, reward to supervisors on the basis of keeping safety records on their subordinates and comparing of safety results against pre-set objectives. Furthermore, top executives should serve as role models to subordinates as disregarding safety rules or treating hazardous situations lightly by executives will send a wrong signal to subordinates.

2.4 Factors leading to Occupational Accidents

There are several factors that lead to occupational accidents. These factors could be administrative, organisational or structural. In the case of administrative, the provision of mandatory involvement of workers in the decision making process and the implementation

of policies that affect safety and health of the upload worker will facilitate policy making and eliminate conflict as stated by Torrington and Hall, (1991). There is no doubt therefore that in any organisation, conflict ensues between the needs of the employer to push for increased output and efficiency and the need of the employee to be protected from hazards of the workplace. It is of interest to note that every manager wants the work environment to be safe and healthy but the contemporary issue that they face is costs. In this case employers have a duty to consult representatives of employees for the purpose of making arrangements for promoting health and safety measures. This approach is described by Muhleman and Lockyer (1998) as the total involvement approach which stresses on the full co-operation and commitment of all employees and management. In this case every party accepts its full share of responsibility and participates fully in the making and monitoring of health and safety at the workplace. Muhleman and Lockyer further argued that sufficient authority to take the necessary action to secure implementation of the organisation's health and safety policy be given to the officer in charge who must have the personality to communicate the message to the colleagues or employees, but Muhleman and Lockyer emphasised that the responsibilities of the production and operation manager for training, supervising and motivating in safety consciousness cannot be abdicated, since the promotion of health and safety at work is first and foremost a matter of efficient management.

2.4.1 Lack of qualified health and safety inspectors

John T. F. (1994) also identified the lack of qualified inspectors to be hired in the labour market as a major drawback to enforcement of occupational health and safety laws.

According to John, the ideal situation is that all sawmills should have qualified safety inspectors to assist in the area of accident prevention. Unfortunately, in most developing countries, sawmills do not have safety inspectors especially the small scale ones.

2.4.2 Non availability of health and safety committee

There should be health and safety committee to help address all health and safety issues. Health and safety committees are responsible for the identification and control of health and safety standards, the establishment and promotion of health and safety education and information programmes and taking action where necessary. The committee is also charged with the settlement of dispute about an employee's refusal to perform a hazardous task .WHO, (1995).

2.4.3 Insufficient support from other managers

Ivancevich (1995) considered the role of top management and argued that the success of health and safety programmes requires the support and co-operation of all managers. Top management must support health and safety programmes with adequate budget. Managers must also give safety and health their personal support by talking about it with everyone in the firm. Acting on report about safety is another way top management can ensure success. As a result of different numerous problems among working people, the need for occupational health programmes is important to all countries (industrialised, newly industrialised or developing countries including the least developed ones). The types of

problems may however vary substantially according to the national and local needs and conditions, cultural influences and other local factors.

The ILO has estimated that, although very few fatal accidents are recorded, 46,000 fatalities caused by accidents occur each year in the sub Saharan Africa. These figures are supplemented by community accidents and in particular by fatal work related diseases. The ILO's estimate is that by the year 1990 there were 112000 deaths and by the year 2000 there could be as much as 125000 work related fatalities annually in the sub Saharan Africa. During an expected working life of 35years 46000 annual occupational injuries means a loss of 1.6million lives of every working generation in Sub Saharan Africa. ILO, (1993).

2.4.4 Non Existence of Primary Health Care

ILO (1985) asserted that majority of workers in the third world receives no healthcare whatsoever. For these countries primary healthcare in the workplace is at present a pioneering effort that remains to be undertaken.

The socio-economic development, pesticides, poisonings, organic and mineral dust, heavy physical work, heat, stress, industrial chemical, physical hazards and ergonomic problems make up the list of priorities (WHO Global strategy on occupational health for all 1997).

If activities in an organisation are not well organised, there is that possibility of this also promoting accidents in the organisation.

According to the International Labour Office (1997) changes in day-to-day behaviour: the transition from agriculture modes of production to industrial is such that workers may be

required to work with new machines and dangerous chemical substances necessitating strict protective measures for which they are completely unprepared.

2.4.5 Size of organisations

In developing countries, generally majority of people are employed by small organisations that employ less than 100 persons. African Newsletter on OHS (1996) cited that it is usually more difficult to establish health and safety procedures in small organisations because of greater ignorance, seasonal labour and higher labour turnover.

2.4.6 Scarcity of medical personnel

The scarcity of medical personnel is a major obstacle to efficient health services in Africa considering the issue of safety in Gambia and Kenya. Annual Report, H&S Kenya (1996, 1997 and 1998). The report stated that in Kenya, in 1981, there were 6,332 premises registered as factories, yet a total of only 1,754 accidents were reported. Also in Zambia with 2,050 premises registered as factories only 346 accidents were reported in 1982. This phenomenon was largely attributed to lack of medical personnel.

2.5 The Impact of Health and Safety Training on Staff

It is generally believed that training is an important factor in improving safety in an organisation. Safety training enhances the skills competences, abilities or the knowledge of the worker. As indicated by Muhleman A., Lockyer K., (1998), safety training must be systematic, must focus on an objective and must continuously help to meet not only

changes in technology, but also changes in the environment in which an organisation operates.

However, Ivancevich (ibid) states that findings of studies of the effectiveness of such training are mixed. Some studies indicate that some methods, such as job instruction training and accidents simulations, are more effective than others. Others contend that successes are accounted for by the employee's perception that management really believes in safety training. A few studies found that the programmes make employees more aware of safety, but not necessarily safer in their behaviour. Nevertheless, effectively developed safety training programmes can help provide a safer work environment for all employees.

Cole G. A. (1997) also agreed that safety training is an essential part of any accidents prevention scheme, and should commence immediately a member of staff is employed. Employees should be made aware of their responsibility for health and safety, general and special hazards, and the use of medical services, safety rules and procedures for reporting accidents.

Torrington and Hall (1991), also stated that safety training makes employees understand the nature of hazards at the workplace; awareness of the safety rules and procedures to make them comply with the safety rules and procedures.

The effectiveness of training programmes depends on the ability to identify health and safety hazards within the wood industry. The Health and Safety Executive News Letter (2002) identified the following risks: machinery safety, falling objects, falls from height, slips and trips, transport, handling e.g. lifting and pulling, fires and explosives, dust, noise, hand-arm vibration syndrome and exposure to hazardous chemicals as some of the causes of accidents in the sawmill but Milkovich and Bondreau (1991) recognised the use of two

common strategies to respond to health and safety. These are reactive and proactive approaches.

Reactive approach; this is where a victim to a particular job-related accident is compensated with workman's compensation. As far as this approach is concerned, the problem is not anticipated or foreseen by management before its occurrence so whenever the problem happens an action is then taken to solve the problem, hence the name reactive.

The proactive approach is where preventive programmes such as re-designing of jobs to diminish hazardous conditions; conducting safety training programmes, safety audits conducted and offering pay bonuses for good safety records to help prevent the occurrence of accidents. The proactive approach is mostly recommended but since it is not all accidents that can be anticipated, both the reactive and proactive approaches are used.

Ivancevich (1995) said the challenge therefore is how to make the work- place safe and healthy. The preventive measures adopted by organisations in an attempt to improve on safety provisions include the improvement of safety precautions, protective guards are designed for machinery and equipment, colour coding warnings of dangerous areas, standard safety colours, which should be taught in safety classes such as the use of colours to mean several things, example being grey for machinery and red where an area presents danger of fire. Other dangers may be highlighted by bright orange paint.

The Health and Safety Executive (HSE), an article cited in African Newsletter (2000) provides the following checklist for main cause of accidents and suggested preventive measures;

Machinery; The woodworking machinery can cause different forms of injuries. To prevent such occurrence all necessary guards must be put in position, operators be adequately trained and properly supervised and also check that the safe working methods are followed.

Falling objects; to prevent one being struck by flying and falling objects, ensure that protective devices are properly used.

In order to prevent kickback of work pieces from machinery, ensure that tools and cutters are adequately secured, provide suitable goggles to prevent injuries from fasteners and also thus make sure timber is safely stacked.

Sawn dust; it is the most common cause of occupational asthma. In 1995, some 10% of all occupational asthma disablement was due to exposure to wood dust (HSE, 2000). To prevent such health risk, exposure to sawn dust must be reduced to the barest minimum; control measures such as ventilation should be properly designed and used. Every employee must be adequately trained and instructed in the likely health risk areas and how to minimise them.

HSE (2000) also stated that, protective clothing and devices are supplied to employees working under hazardous job conditions. These include head protection principally with helmet, eye and face protection of goggles, face shields and spectacles, hearing protections

with muffs and inserts, respiratory protection with air purifying device such as filter respirators and gas mask, air supplying devices.

The few studies on the effectiveness of these protective measures indicate that they do reduce accidents. The trick that can make the use of these protective measures effective is safety training.

Muhleman and Lockyer in their work on accidents prevention programme highlight three major elements in the accidents prevention process; work inspection, accidents or incidents investigations and follow ups e.g. safety training. The first two elements have the same objective(s); to find, record, report possible accidents, causes and to recommend future corrective actions.

Cole (1997) acknowledged that lack of experience and poor safety training also cause accidents, therefore correct method of performing a task must be an essential part of safety training as well as what to do in times of risk. Safety training should seek to create awareness and change in behaviour of employees.

2.6 The Effects of Occupational Accident on NDVP Ltd.

The economic development of every nation depends much on factors like education, healthy workforce etc. Occupational health is therefore in the centre of sustainable development. The prevention of occupational accidents, injuries, and diseases and the protection of workers against physical and psychological over load, minimising the unnecessary loss of human and material resources must be the adopted approach to promoting economic growth and development.

Work takes place in an environment that does not always meet required safety standards. Family members of the workers and entrepreneurs including children, pregnant women and elderly people share the work in small-scale industries, cottage industries and non-industries particularly in developing countries. In such situations, most workplace exposures also affect family members; the period of exposure also tends to be larger than the average.

It has been estimated that two thirds of the workers of the world still work in conditions that do not meet the minimum standards set by ILO. (ILO, 2002, Report).

About 100,000 chemicals, some 50 physical factors, 200 biological factors and some 20 adverse ergonomic conditions and an identical number of physical work loads associated with incalculable numbers and types of physiological and social problems have been identified as hazardous factors or conditions of work which usually occur in combinations and have several interactions which have serious negative effect on the health of the individual.

These contribute to the risk of occupational injuries, diseases and stress reactions, job dissatisfaction and absence of well-being. Most of such problems are in principle preventable and should be prevented in view of both interest of health and well-being. According to Cole (1997) in matters of health, safety and welfare at work, the majority of the ground-rules are laid down by statutory regulations. However, the legal obligations only provide a minimum standard. Therefore genuinely concerned organisations should assert the spirit and the letter of the requirement of health and safety.

The most important challenges for occupational health by the year 2000 and beyond will be health problems linked with new information technology, transfer of hazardous technologies, and occurrence of new occupational diseases of various conjoins.

Therefore, health at work and healthy work environments are among the most valuable assets of individual, organisations, communities, and countries, ILO (1999).

Occupational health is an important strategy not only to ensure the health of workers, but also to contribute positively to productivity, quality of products, job satisfaction and thereby to the overall quality of life of individuals and society. Conditions of work and the work environment may have either a positive or hazardous impact on health and wellbeing.

Ability to participate in the working life opens the individual's possibility to carry his or her working skills and social contacts. One third of adult's life is spent at work where the economic and material values of society are generated. However, dangerous explosives and load are often several times greater in the workplace than in any other environment with adverse consequences on health. Occupational health Unit, (MOH, 2002).

Studies by different people have indicated that occupational accidents have serious negative effect on the employee since it could lead to the death, diseases, poor quality of life, incapacitation or otherwise of the worker.

In the case of the organisation, output could be affected negatively as well as the accidents leading to high overhead cost of running the organisation. In some cases too, where the

accidents are on the high side, the image or reputation of the organisation is affected negatively. ILO Encyclopaedia, (1985).

CHAPTER THREE

3.0 METHODOLOGY

This chapter introduces the methods used in arriving at the findings. The study was carried out between the 4th August 2004 and the 15th of November 2004.

3.1 RESEARCH METHODS AND DESIGN

Study Design

The study was a cross-sectional design with a descriptive survey.

3.2 Study Population.

The population for the study was respondents from Naja David Veneer and Plywood Company Ltd, Kaase, Kumasi. Different categories of staff (senior staff junior staff and expatriates) were considered.

3.3 Data Collection Procedure

The researcher carried out the administration of the questionnaires for both the senior group and junior workers of the company. This enabled the researcher to clearly explain items in the questionnaire to respondents. Respondents were assured of confidentiality of their responses and they were expected to be sincere and honest in answering the questions. Records from the personnel department, the company's clinic, the accounts section and the labour office were also reviewed to help the researcher get first hand information. To give respondents extra confidence to enable them give the true picture of what is on the ground, they were asked not to write down their names on the

questionnaires. In any case the researcher was able to retrieve all the questionnaires, it was however discovered that some of the respondents failed to answer some of the items on the questionnaire.

3.4 Data Collection Techniques and Tools

The study made use of both primary and secondary data.

3.4.0 Observation

The principal researcher observed and recorded the behaviour of workers at the company.

The tool used was checklist. Behaviours such as; working without protective clothing, poor working posture, malpositioning of tools, faulty electrical connections, slippery floors, and working with wrong and faulty tools and equipment were observed. To ensure a high level of reliability and validity, the researcher was very particular with adherence to safety standards and policies. However, the study was non-participatory.

3.4.1 Questionnaire.

Questionnaires were designed and administered to employees to help get data for the research work. The questionnaires were divided into two categories namely junior staff questionnaires and senior staff questionnaires. The principal researcher and his assistant administered both questionnaires.

3.4.2 Interview

Interview was used to gather information from plant staff (operators, maintenance staff, engineers, labourers and safety workers) and staff of the Kumasi District and Regional

Labour Offices. The interview helped the researcher to know some of the factors that have led to accidents in the company and the measures put in place to reduce injuries and other work-related accidents in the company. Workers were randomly interviewed taking into accounts the type of work the worker does. Interview guide was used.

3.4.3 Interview with Safety Workers

Most of the people interviewed under safety workers included managers, supervisors, engineers and master mechanics. Interview guide was used as the tool that made the interview successful.

3.4.4 Key Informant Interview

Key informant interview was conducted on officials from records and statistical division of the company, for example personnel division and the clinic of the company and staff from the District and Regional Labour Offices in Kumasi. The tool used was interview schedule.

3.4.5 Field Study

The fieldwork involved observations as to whether the answers given by the respondents were real and true. Also records in relation to accidents at the company's clinic and personnel sections were reviewed to help the researcher get first hand information about pattern and nature of accidents.

3.5 Study Variables

VARIABLES	INDICATOR	OPERATIONAL DEFINITION	SCALE OF MEASUREMENT	OBJECTIVE BEING ADDRESSED
1. Occupational Accident	Negligence, Poor facilities	Work related accidents	Discrete	One
2. Health and Safety Policy	No safety training Is there any, Is it effective, Safety practices followed Safety Rules,	A Statement which contains arrangement and procedures about safety and health Values and Norms of an organisation	Ordinal	Two
3. Organisation Culture	Safety Tools Safety Training Reduction in	Acquiring Safety Skills and Knowledge	Ordinal	Three
4. Safety Training	diseases, accidents, cuts Bruises, fractures, etc	Problems of work related accidents	Discrete	Four
5. Effect of Occupational Accident	Low Output, Incapacitation, Higher Medical Expenses.		Discrete	Five

Source: Author, 2004

Sample Size

3.6 Sampling- Sampling frame

A sample size of 100 persons was selected from the working group of 1,227 employees of the company. The 100 persons selected represented a larger sample that helped to reduce the level of error and increase the level of precision. Out of a total number of 1,227 staff 68 were senior staff and the rest were junior staff, so in selecting the respondents, both purposive and convenience sampling methods were used to select from the different categories of staff of the company.

3.7 Sample Size Estimation

The population used for the study was made up of different categories of employees; namely, engineers, maintenance staff, operators, labourers etc. (management/senior staff and junior staff). Looking at the different categories of staff or workers involved in the study, it became necessary to use stratified sampling. For each stratum simple random sampling was used. The percentage allotted to each stratum took into consideration the number of workers in that category. The interview conducted during the time of collecting the data was purely much of purposive and convenience sampling.

3.8 Pre-testing

To ascertain reliability and validity of the instrument, a pilot test was conducted using the instruments on a similar firm. (Bibiani Logs and Timbers in Kumasi.). The researcher used three days for the pilot testing, i.e. from the 12th of September 2004 to 15th September 2004. After the pilot testing, it was realised that there were some few problems with the

instruments designed or questions asked. As a result of this, some corrections were made to the instrument to help make administration easier. In course of administering the pilot questions respondents with similar characteristics to those of the study were chosen at random.

3.9 Data Handling

To check for accuracy and completeness of data and ensure quality, questionnaires and interview guide were numbered serially. For instance all responses on agreed items were assigned with letter A and responses on disagreed items were coded AA.

3.10 Data Analysis/Presentation

The data collected was analysed using Statistical Package for Social Sciences (SPSS) computer software programme. The result was presented using statistical tools such as frequencies, tables, histograms and pie charts.

3.11 Ethical considerations

Introductory letter from the Department of Community Health, School of Medical Sciences, Kwame Nkrumah University of Science and Technology was officially sent to introduce the principal researcher to the various authorities concerned. The principal researcher also formally sought the consent of all respondents and observed all the necessary protocol.

The researcher was aware that modern companies or organisations are operating in a competitive environment. As a result of this, the researcher ensured that information received from respondents was treated with a high level of care and confidentiality.

The identities of key informants were not disclosed in the report since the research is to evaluate what pertains and not to use personal opinions of individuals.

CHAPTER FOUR

RESULTS

4.0 Introduction

The analyses of the study have been focused mainly on demographic characteristics and perceptions of sawmill workers on the issue of health and safety practices in sawmills.

4.1 Demographic Characteristics of Respondents

It is very important to consider the background information of the respondents in the study. Such information helps in determining the extent to which the data they provide could be relied upon and also assisting to know the category of respondents amongst others.

4.2 Sex of respondents

Respondents in the study were predominantly males forming almost about 90% of the total respondents.

Table 4.1 Sex of Respondents

Sex	Number of Respondents	Percentages
Male	88	88
Female	12	12

Source: Survey data, 2004

The total numbers of respondents were 100. Of this number 88 were male and 12 were female.

Table 4.2: Age Distribution of Respondents

Age Range (Years)	Respondents Number
20-30	32
31-40	40
41-50	18
51-59	10
Total	100

Source: Survey data, 2004

The age distribution of respondents was analysed in table 4. 2. It was realised that the minimum age was 22years, and the maximum was 58 years. The mean age was 38, the median age was 37 and the modal age was 28.

Table 4.3: Educational Background of Respondents

Level of Education	Responses	Percentages
Illiterates	14	14
Basic Level	54	54
Senior Secondary	14	14
Polytechnic	10	10
University	7	7
Professional	2	2
Total	100	100

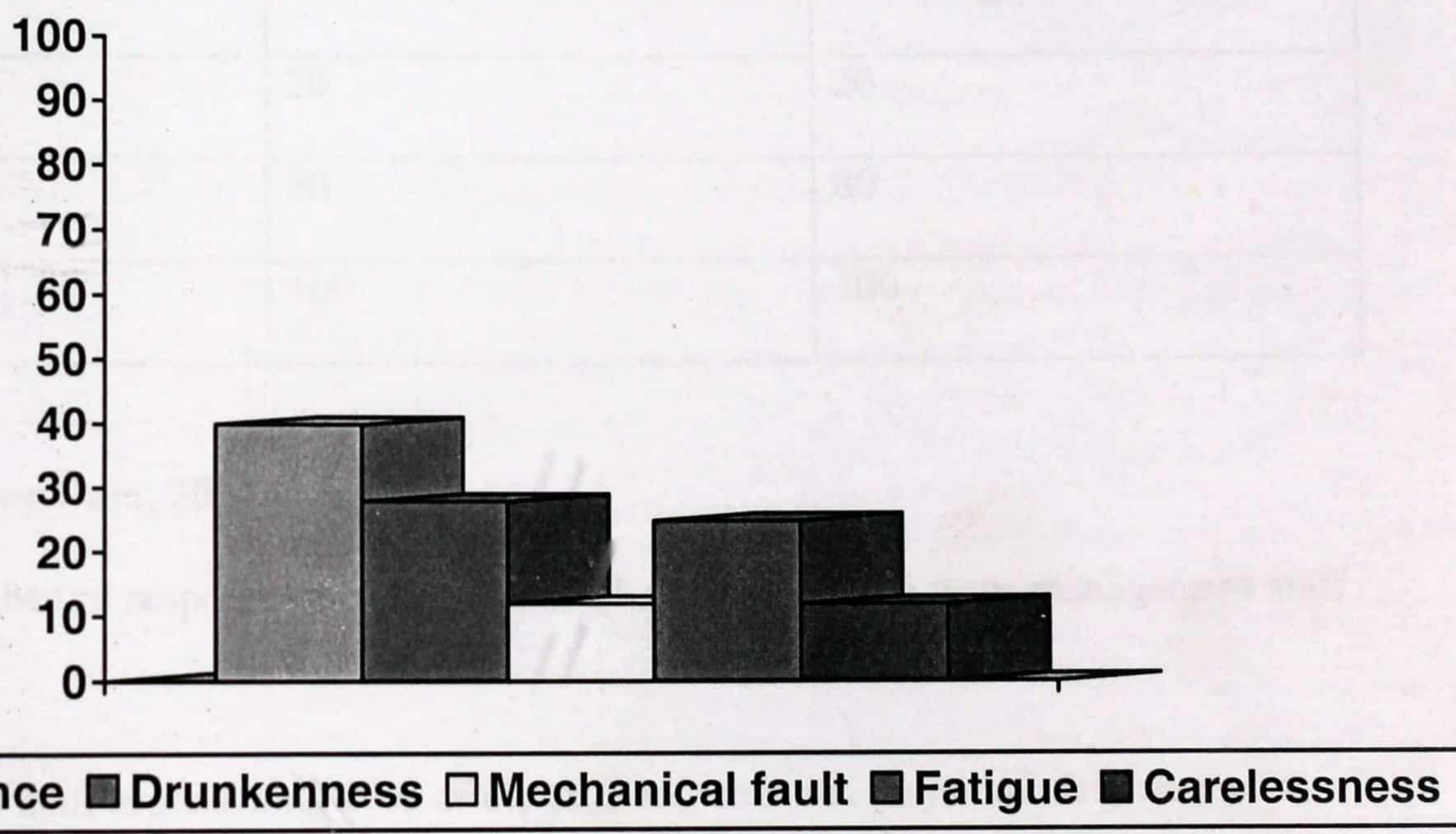
Source: Survey Data, 2004

Out of the total number of 100 workers who responded to the questionnaire, it was realised that 54% of them only had basic education and 14% of them were illiterates. This means that 71% of the workers who responded to the questionnaire were not having any good educational

background. So it stands to reason that if proper safety training is not given, there is that possibility of recording more accidents in the company. Also since most of the respondents cannot read and write, there should be effective supervision of subordinates' activities to help reduce accidents in the sawmills.

To assess the nature of H&S training in the company

Graph 4.1: Causes of Accidents



Source: Survey Data, 2004

Causes of accidents could be attributed to many factors. Those mentioned by the respondents were negligence, drunkenness, fatigue, carelessness and mechanical faults. In any case negligence was identified as the most contributing factor for accidents. 40% of the respondents were of the view that negligence is highly responsible for accidents in the factory. 12% of the respondents also think mechanical fault also leads to accident in the mills. Drunkenness and fatigue were also mentioned as two of the responsible factors for accidents.

Table 4.4: Categories of staffs

Staff Type	Number of Respondents	Percentage
Senior Staff	20	20
Junior Staff	80	80
Total	100	100

Source: Survey Data, 2004

The total number of respondents was 100. Out of this number 20 were management staff while

80 were junior staff representing 80% of the total respondents. 80 junior staff were chosen because most of the workers who work in the factory floor were junior staff as such they are the category of staff that could help get the correct information for meaningful conclusion of the research work.

Table: 4.5 Categories of Junior Staffs

Category of Staff	Number of Responses	Percentage
Labourers	30	30
Operators	49	49
Supervisors	19	19
Machinists	2	2
Total	100	100

Source: Survey data, 2004

The table indicates that 55% of the respondents were operators 35% were labourers 5% were supervisors and machinists were 5%. Operators constituted 55% of the respondents because most of the workers who are prone to accidents were operators.

Table 4.6: Length of Period worked in the company

Years/Period	Number of Respondents	Percentage distribution
1-5 year	19	19
6-10 years	55	55
11-20 years	16	16
21-30 years	3	3
31 + years	7	7
Total	100	100

Source: Survey data, 2004



The table indicates the number of years respondents had worked in the company. It showed that 55% of the respondents had spent 6-10 years in the company, 16% spent 11-20 years in the company and 1-5 years has a respondent percentage of 19%, 3% spent 21-30 years while 7% had spent 31 years. This information is important because it will help establish a relationship between the number of years worked in the company and the accidents trend of the individual.

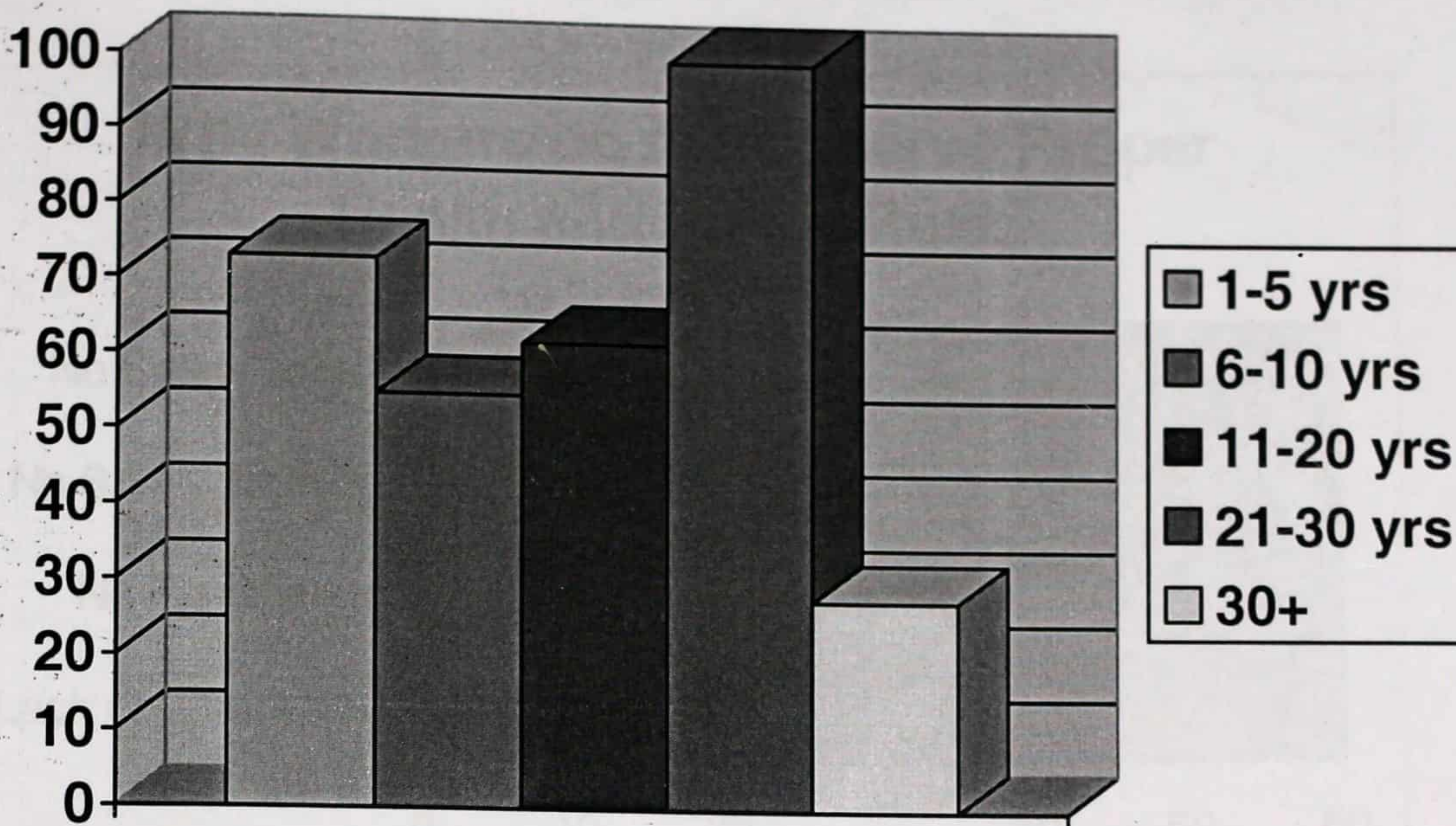
Table 4.7: Whether the Company has a Health and Safety Policy

Responses	Number of Respondents	Percentage
Availability of Safety Policy	15	75
No Safety Policy	5	25
Total	20	100

Source: Survey data, 2004

When 20 management staffs were asked whether the company has a good health and safety policy, 15(75%) respondents who were senior staff said the company has a proper health and safety policy while 5(25%) of the respondents claimed that the company has no health and safety policy. This is an indication that some of the senior staffs are not even aware of the availability of the safety policy of the company.

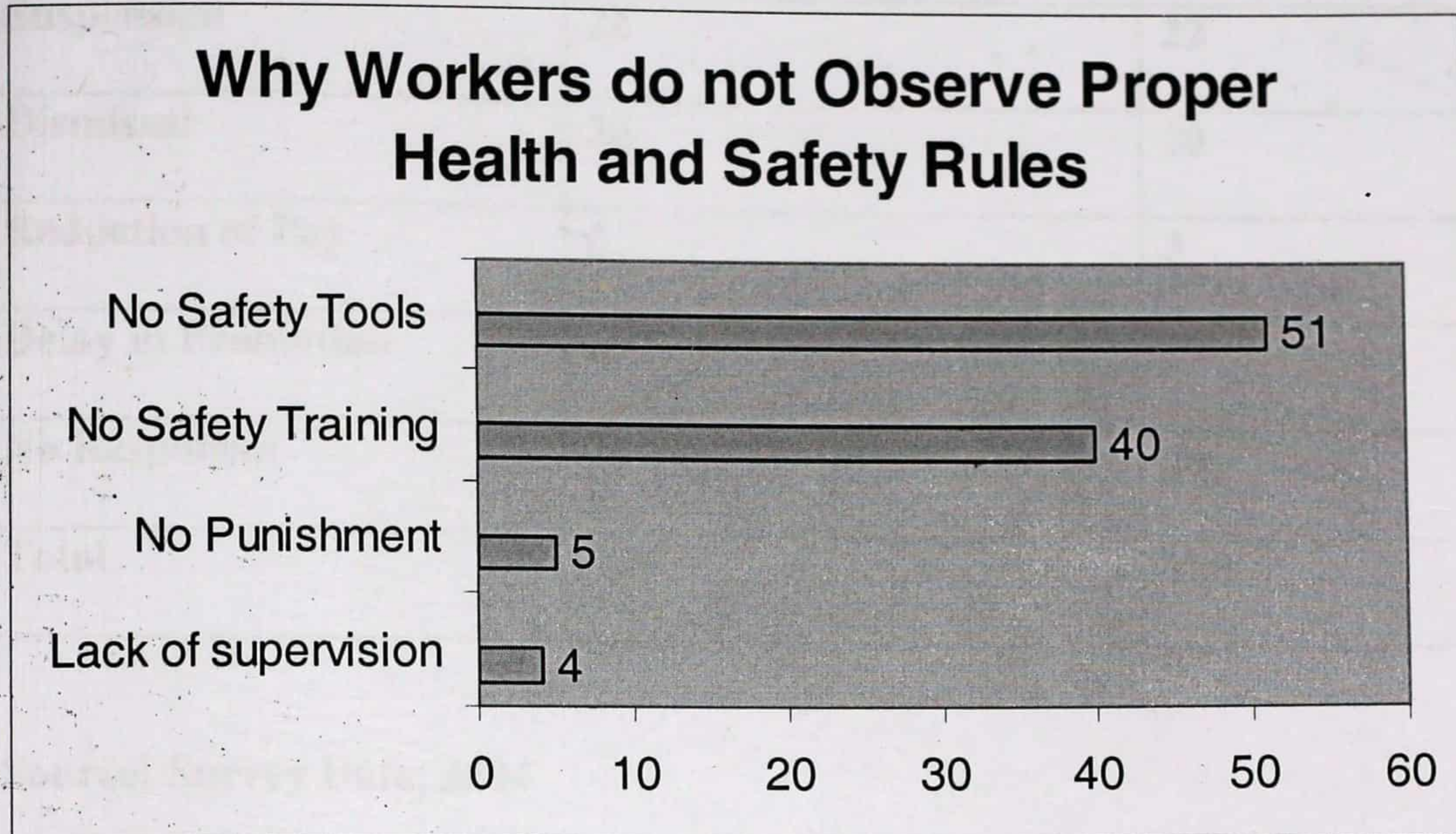
Graph 4.2 The Effects of NDVP Ltd.'s Culture on Health and Safety



Source: Survey data, 2004

Out of 19 respondents who have worked in the company for 1-5 years, 73% of them responded that they have ever been involved in accident, 55% of respondents who have worked in the company for 6-10 years have ever been involved in accident while 62% of respondents who worked in the company for 11-20 years have ever been involved in accident. All the 3 respondents who had worked in the company for 21-30 years have all been involved in accident and 28% of respondents who have worked in the company for more than 31 years have ever been involved in accident.

Graph 4.3: Why workers do not observe proper health and safety rules



Source: Survey data, 2004

Out of the total number of 100 who responded to the questionnaire, 4(4%) attributed the problem of why workers do not observe proper health and safety practices to lack of effective supervision, 40(40%) said the safety training given in the company is not adequate, 51(51%) said there are no sufficient safety tools and equipment, and 5(5%) said those who violate safety rules are not severely punished.

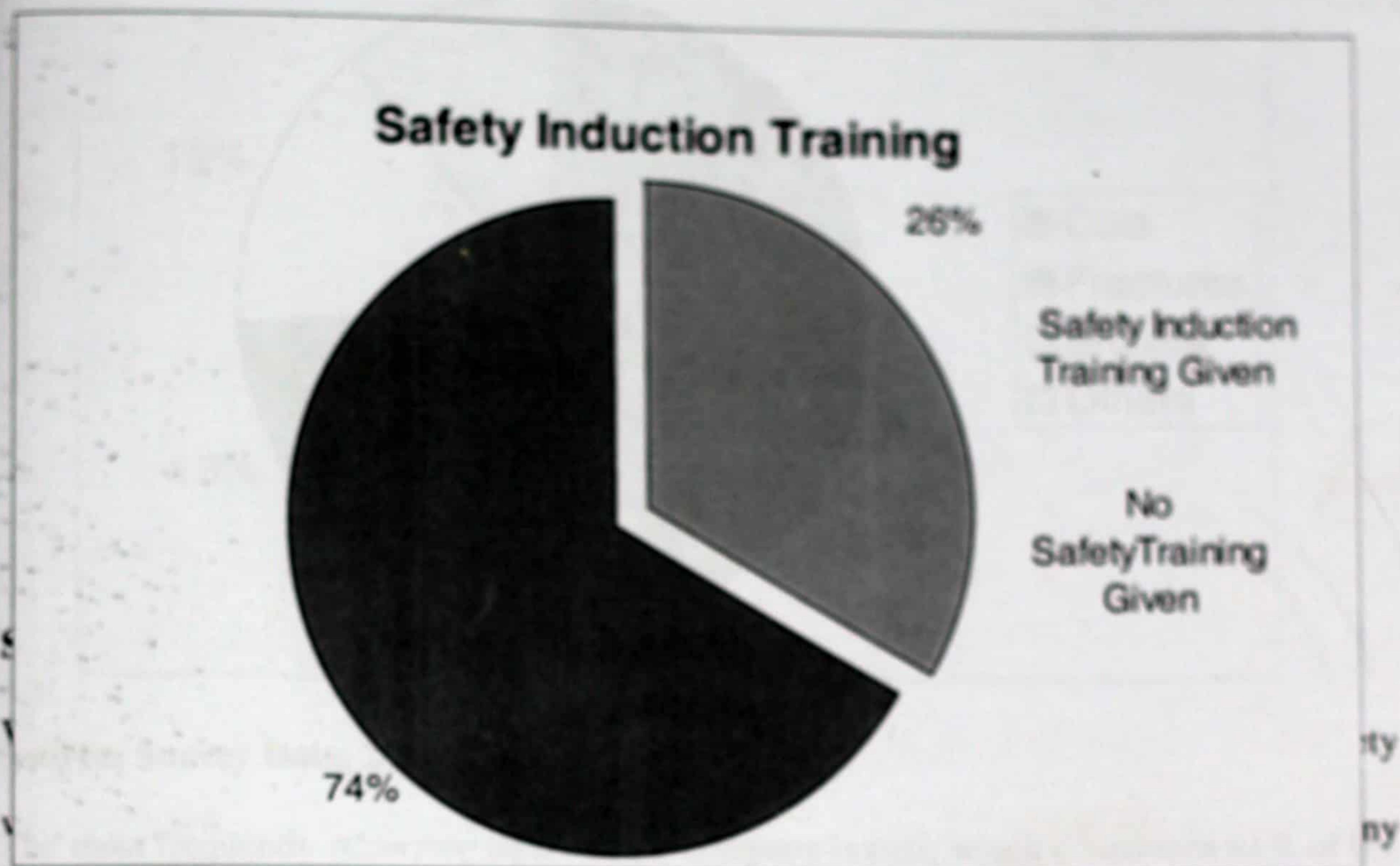
Table 4.8: Possible actions of management when staffs refuse to observe safety rules

Responses	Number of Respondents	Percentage
Suspension	22	22
Dismissal	20	20
Reduction of Pay	3	3
Delay in Promotion	29	29
No Responses	26	26
Total	100	100

Source: Survey Data, 2004

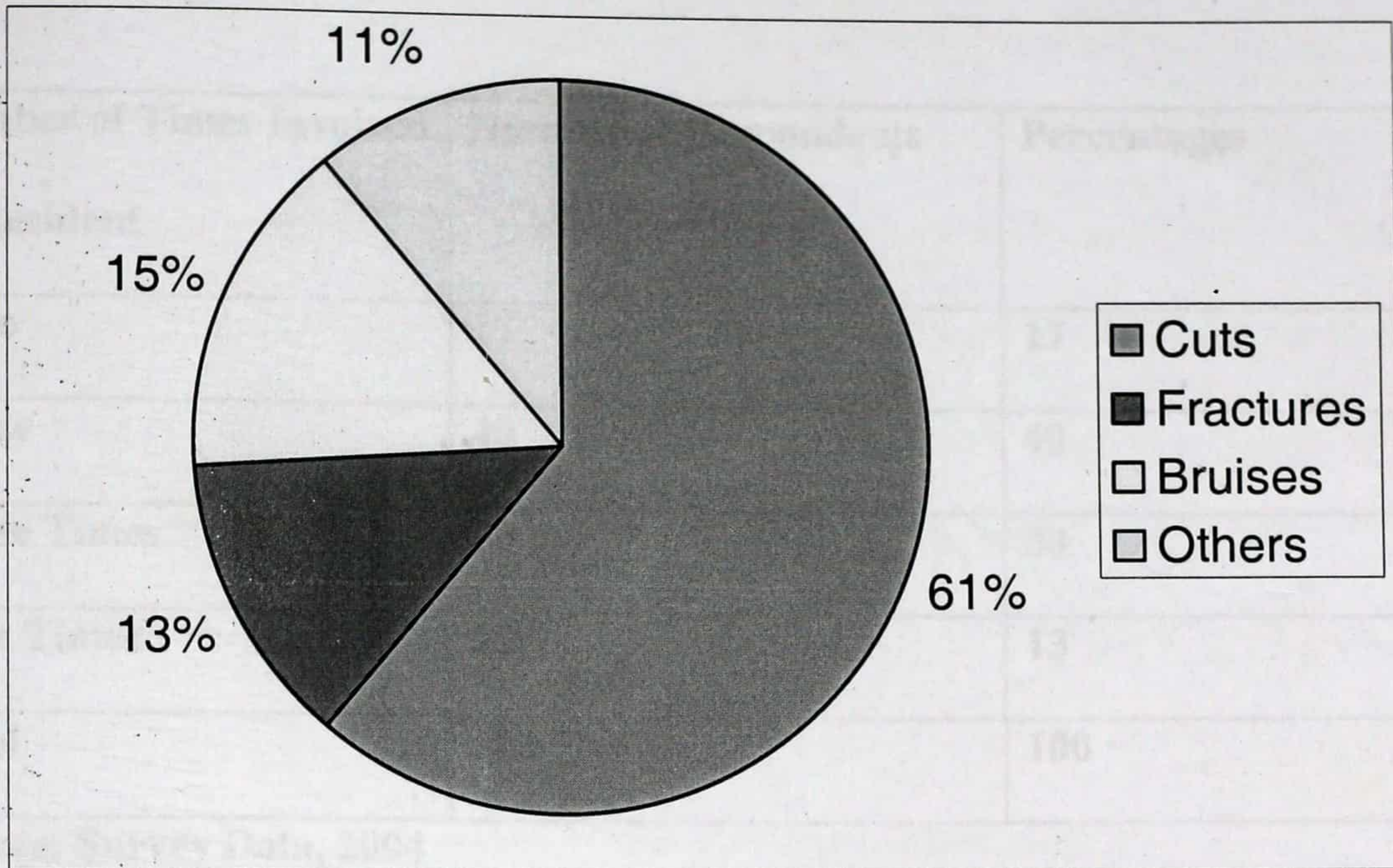
Out of 74(74%) of the respondents who responded to the question, the possible action(s) management takes when employees violate(s) safety rules, 22(22%) said such employee(s) is/are suspended, 20(20%) said the one is dismissed whiles 3(3%) said the person loses part of his/her pay and 29(29%) said that the person's promotion is delayed

Graph 4.4: Whether Safety Induction Training is given



safety induction training but 26% said they were given. However, analysing the response closely indicates that those who were given the safety training were mostly senior or management staffs that are mostly less prone to accidents in the factory as compared with the junior staffs.

Graph 4.5: Most frequently Occurring Injuries



Source: Survey Data, 2004

The most frequently occurring injury in the company is cuts, which constitutes 61% of the total injuries recorded. 15% of the respondents also said bruises are also common while 13% mentioned fractures.

Table 4.9: Number of times respondents involved in accidents

Number of Times Involved In Accident	Number of Respondents	Percentages
Once	17	17
Twice	40	40
Three Times	30	30
Four Times	13	13
Total	100	100

Source: Survey Data, 2004

Out of the 100 respondents who were contacted about the number of times they have ever been involved in accident 17% of the respondents said once, 40(40%) said twice, 30(30%) said three times and 13(13%) had never been involved in accidents. This is to say that apart from management staff almost all the workers in the processing and manufacturing units have ever been involved in accident in the company.

CHAPTER FIVE

5.0 DISCUSSION

5.1 The Relationship between Health and Safety Policy of NDVP Ltd. and Accidents.

It is expected that a company like Naja David Veneer and Plywood Ltd. should have a good health and safety policy to help minimise accidents and promote the health status of the workers in the organization. In reference to the Health and safety At Work Act (HASAWA), 1974, any company that has more than five employees should have a safety policy to help promote the health and safety status of the workers. This safety policy normally specifies the arrangement, organization and procedures that all safety issues are based on. Naja David Veneer and Plywood Ltd. has total workforce of 1,227. When 20 management staff were asked as to whether the company has a good health and safety policy, 15(75%) of them said the company has a good health and safety policy while 5(25%) said that the company has no health and safety policy. The 75% respondents who stated that, the company has good health and safety policy is a clear indication or manifestation that, the company has a health and safety policy. However, looking at the responses given by the junior staff of the company about safety practices suggests to the researcher that even though the company has a health and safety policy, most of the workers are not aware of it or better still the policy may be assumed not to be adequate or comprehensive enough. It also has been established that a good safety policy should state the general statement of intent, the organization (people and their duties) and arrangements (systems and procedures).

The management of health and safety at work Regulations, 1992, Regs.3 and 4 requires that employers make known to all employees and first-aiders the company's procedures for dealing with all ill health and particular hazards. However, it is noted that executives are personally responsible for the implementation of safety procedures, safety systems and revision of safety policies. It is therefore unfortunate that 25% of management staff interviewed said that the company has no safety policy and 75% are aware of the fact that, the company has a safety policy.

The identification of good health and safety practices by executives is an indication of good management, since management has equal responsibility in the management of health and safety in the company as in the case of increase in output. In Naja David, there is a health and safety committee, however, if one looks at the pattern of accidents in the organisation, it can be concluded that the committee is not functioning as expected.

Available figures at the personnel department about accidents suggest that accidents are higher at seasonal periods like Christmas, Easter, getting to break or closing. The reason could be that workers want to meet deadlines, targets or standards, therefore in most cases the issue of safety is given less attention.

Analyses of results of workers interviewed suggested to the researcher that almost every worker at the processing section has ever been involved in one form of accident. The researcher therefore thinks that if the safety committee and management put in some amount of effort in relation to health and safety, the accident levels recorded could have reduced in the organisation drastically.

When one closely analysed or examined the situation prevailing at NDVP, it can be concluded that the statutory regulations are not adhered to as expected.

5.2 The Effects of Naja David's Culture on Health and Safety

Organisational culture could simply be described as the values and norms of an organisation. Values are the guiding beliefs, which determine the behaviour of people within the organisation whiles the norm, on the other hand are the accepted standards or attitudes in the enterprise.

The immediate work environment includes the attitudes and actions of peers, supervisors and the climate being created in the organisation. In the case of Naja David Veneer and Plywood Ltd., the culture at the place, can make one think that, in most of the areas of work, workers are seriously prone to accidents. For example most workers do not use protective clothing or gadgets like gloves, helmets, goggles, masks etc. in the course of their work. There is therefore every cause for one to say that the culture of the company is likely to promote accidents. It is always important for one to know that there is a direct link, relationship or correlation between the culture of an organisation and the health and safety of workers.

From observations made and interviews conducted, it was realised that most of the workers of NDVP Ltd. are not nurtured to become accident conscious and besides that workers who out of their negligence or carelessness fall victim to accident are not severely punished to help serve as deterrent for others. For example when respondents were asked why they refuse to comply with safety provisions, the reasons assigned by workers were 4% attributed to poor supervision, 5% said offenders are not punished severely, 51% attributed the reason to non-availability of safety tools and equipment and 40% said there is lack of safety training on safety rules. All these conditions or factors form part of the culture of the

organisation, for that matter it is proper for one to say that there is always a relationship between an organisation's culture and accident.

When a total number of 100 workers were interviewed as to whether they have ever been involved in an accident before out of the number 17% of them responded that they have ever involved in accidents once. 40% said twice, 30% three times and 13% four times.

This information or statistics confirms that, accidents in the organisation are quite high and when the different types of accidents were analysed, it was realised that cuts come first with about 61% followed by bruises 15% and fractures 13%. Looking at the pattern of accidents or injuries closely would one the chance to say that there is no proper observation of simple health and safety rules and regulations in the processing section.

Most accidents are caused by various forms of neglect such as careless use of machines or tools, failure to wear protective clothing, or failure to use safety devices. All these faults amount to poor attitudes towards safety. Improving poor safety attitudes hinges upon human relations and the supervisor's ability to create team spirit and use it as a tool to promote safety consciousness and help in reducing work-related accidents.

Based on the response of the study one would expect therefore that executives or management of NDVP Ltd. could try as much as they can to promote good culture that would enhance the health status of the workers.

5.3 Factors leading Occupational Accidents at NDVP Ltd.

There are several factors that lead to occupational accidents in a company like NDVP Ltd. In NDVP Ltd. Out of 20 workers interviewed 15 of them representing 75% of the respondents are aware of safety provisions of the company. This means employees are

involved in issues of health and safety. The involvement approach stresses on the full co-operation and commitment of all employees' and management. In this case every party accepts its full share of responsibility and participates fully in the making and monitoring of health and safety at the workplace. Muhleman and Lockyer (ibid) argued that sufficient authority to take the necessary action to secure implementation of the organisations health and safety policy, be given to someone who has the personality to communicate the message to the colleagues or employers. They however emphasised that the responsibilities of the production and operation manager for training, supervising and promoting safety consciousness should not be abdicated, since the promotion of health and safety at work is first and foremost a matter of efficient management.

It was indicated that a high percentage of the workers had only basic education. Because out of the total respondents, 54% of them had only basic education and 14% were illiterate.

In an organisation where the level of education of the staff is low, there is the possibility that work-related accidents to be recorded would be high. Hence the phenomenon at NDVP Ltd.. Other factors like negligence, drunkenness, fatigue, mechanical faults and carelessness were also identified to be some of the factors that led to accidents in the company. Out of the 100 respondents who answered the question on the causes of accident, 40% attributed the problem to negligence, 20% to drunkenness, 12% to carelessness, 12% mechanical fault and 16% attributed the problem to fatigue.

In analysing the results of the data, it was also realised that the place of work of the employee has remarkable relationship with accidents. For instance all the 49 operators and

2 mechanists had ever been involved in accident before. This is an indication that operators and mechanists are more prone to accidents than the other workers.

Interviewing workers has also helped to know that the male employees always involved in severe accidents than their female counterpart.

Data analysed has also revealed that the non availability of safety training is a factor that contributed to most accidents in the company. 74% of the total respondents who answered the question on safety induction training claimed that they were not given safety induction training when they were first employed. However, it was asserted that safety induction training make employees become safety conscious, which in the long run help to reduce the number of accidents that are recorded in a company.

On the part of management, it was also realised that accidents could be attributed to lack of effective supervision, lack of safety training in general, non-availability of safety tools and equipment. When respondents were to answer the question why workers do not observe proper H&S rules, 51 attributed it to lack of safety tools and equipment, 40% said lack of safety training is the problem, 4% attributed the problem to lack of effective supervision and 50% said those who violates safety rules are not severely punished.

When some officials were interviewed about what they think leads to accidents in the company, some of them said, the safety inspectors of the company are not many. It was also realised that the newly employees are always more involved in accidents than those who have worked in the company for along time. For instance 75% of all 19 employees who worked in the company for not more than five years have ever been involved in accident, 53% of the 55 employees who worked in the company for about ten years have

ever been involved in accident and 62% of 16 respondents who worked in the company for about 20 years have been involved in accident. This is to say that the more years an employee spent in the company the lesser the chances of the one involving in accident.

In relation to the categories of staffs, junior staffs are always more involved in accident than senior staff. This is because the junior staffs are many; however, the attention paid to them seemed to be less.

5.4 The Impact of Safety Training on the Company

It is generally believed that training is an important factor or ingredient that improves safety situations in an organisation. As indicated by Muhleman and Lockyer (1989) training must be systematic and objective focus, continuous to meet not only changes in technology, but also changes in the environment in which an organisation operates. Ideally therefore, it is then proper for an organisation to incorporate safety training into its induction or orientation programmes.

This is to help the new employee to get himself/herself acquainted to the new environment. However, unfortunately this is the situation at Naja David in particular and probably sawmills in general because 74% of respondents stated they were not given any training when they were employed. It is only 26% of the respondents who said they were given training when they were first employed. Basically this 26% were senior staff.

Ivancevich (ibid) indicated that job instruction training and accident simulations are very effective methods that could be used for accident prevention and safety consciousness in

an organisation. It is therefore important that Naja David in particular and sawmills in general adopt such strategies. Training can therefore be said to be the ingredient that promotes organisational efficiency and effectiveness. So for NDVP to achieve its objective, training should be seen as one of the basic tools that can do the trick.

Safety training is an essential part of any accidents prevention scheme or approach and should commence immediately a member of staff is employed to help update, uplift and upgrade the skills of the employee in question. Looking at the result of the studies conducted, it was revealed that at Naja David Veneer and Plywood Ltd., when people are employed, they are not given induction training except in some few cases that training is given. The reason assigned to this phenomenon when some of the employees were interviewed was that, the unskilled labourers do not need any special training to enable them do their work, so it is only a few supervisors who are given training. And this response could be inferred from graph 4.4 of results analyses. This could be partly due to the fact that most of the workers employed are casual workers. A total of 100 people interviewed as to whether they were given induction training on safety when they were first employed 26% said they were given training but not on safety while 74% said they were not given any orientation or induction training on safety. Analysing the responses given, it is therefore right for one to believe that safety training is not regarded very important tool, technique or ingredient that can minimise accidents and invariably enhance output in the company. Safety training will help to make employees aware of their responsibilities for health and safety, the use of medical services, and safety rules and procedures for reporting accidents. If one should look at the results in relation

to the number of times an employee involves in accident, it is clear for one to say that the level accidents reported is on the high side. For instance 17% of respondents said they involved in accident once, 40% twice, 30% three times and 13% four times. This result is an indication that accident in the company is high.

Basically there are two strategies to respond to health and safety issues. These are proactive approach and reactive approach. In the proactive approach, preventive programmes that help to guard against accidents occurrences are put in place. It is as a result of this that safety induction training is required of an organisation. The preventive programmes that could be put in place may include re-designing job to minimise hazardous conditions, conducting safety audits and conducting safety training programmes. While the reactive approach is where victims to a particular accident situation are compensated. In NDVP Ltd., 14% of the factory workers interviewed were illiterates and 54% of them are just holders of basic school certificates as such reading is much of a problem to them as a result of this the possibility of recording higher accidents is there. This is also to say that the level of education of the staff of NDVP Ltd. is low. So the trick that can help minimise accidents at the place is safety training, which in any case is the proactive strategy.

There are three major elements in accident prevention process. These are work inspection, accident or incident investigations and follow-ups (safety training). This is to suggest that safety training is an ongoing activity and not one-off activity.

It was established by WHO that safety training makes employees understand the nature of the hazards at the workplace; create the awareness of the safety rules and procedures. However when 20 workers were interviewed on the issue of accident inspection 14 of the respondents said it is not done frequently.

It has been established that some work has been done in the area of safety training. However, statistics at NDVP Ltd. in relation to occupational accident is still higher than expected which is an indication that, much more work still need to be done in the area of safety training to help minimise the high level of accidents in NDVP Ltd. in particular and sawmills in general.

5.5 Effects of Occupation Accidents.

Occupational accident of whichever form has a remarkable negative effect on the individual, the organisation, society and the nation at large. In the case of the organisation output is affected negatively and this has a negative chain effect on the profit, wages and salaries and staff welfare and wellbeing (quality of life of the staff). It was realised that, accident at the workplace affect the performance of workers in the organisation. What this meant was that objectives, standards and targets may sometimes not be met as a result of the accidents. For example at Naja David alone the serious accidents recorded for the three years following 2001-2003 as indicated in the rationale for the study showed the was a steady upward trend in the number of accidents recorded in the company. Records at the personnel department of the company indicated that the company spends on the average around ₵80m a year. This means that accidents are draining the company of its financial resources. This phenomenon really some negative chain effect on the company.

Figures from the regional office labour office in Kumasi showed that in the year 2004 the total compensation paid to victims of reported accidents of the wood processing companies as workman's compensation was ₵875,355,705 and for the year 2003 it was ₵925,620,000.

This is to say that accidents are seriously the finances of companies in the wood industry. So since occupational accident is a cost (in terms of time and money) to an organisation, every effort needs to be put in place by managers or employers to reduce workplace accidents as a cost cutting measure. This is buttress the point or assertion that manager's ability to cut down cost through reducing occupational accident is a plus or credit to such a manager in terms of his managerial ability. So managers should do all they can to minimise or reduce occupation accidents.

Even apart from everything, running of the company's clinic is quite expensive and this drains the company of its financial resources.

On the part of the individual, it was realised that accident at the workplace affects the quality of lives of employees; e.g available figures at NDVP indicated that there were 3 fatalities between 2001 and 2003 as a result of occupational accidents and in 2001 alone two employees had their hands and fingers amputated respectively. Also poor health and safety practices at the mills could make the individual to suffer asthma or any lung disease. (Source: Doctor, company's clinic). This phenomenon of occupational accident can be described as dreadful to individuals, organisation, society and the nation as a whole. In light of this, much effort needs to be put in place to ensure that the negative effect of occupational accidents is minimised if not eliminated.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The project provided the opportunity for the researcher to evaluate the health and safety practices at Naja David Veneer and Plywood Ltd., a sawmill company in Kumasi.

It was realised that seasonal factors like traditional holidays (Christmas, Easter) break periods and rains have marked influence on the distribution of accidents at NDVP Ltd.

Hardly could workers be involved in decisions that are made in the company.

Understandably, the main concern of the authorities of the company was on how to increase productivity (profitability), so any activity not having a direct influence on profit margins was given less priority.

High proportions of injuries occurred through machinery and handling of materials. The processing section has the highest number of employees and accounts for over 80% of all the accidents of the company.

From the records reviewed at both the clinic and the personnel department (accident statistic summary), it was concluded that fingers and arms, followed by eyes suffered most of the injuries at NDVP Ltd.

Problems that hampered smooth execution of safety procedures included costs, insufficient space, lack of experts, lack of spare parts, ignorance on the part of management and workers, lack of inspection on the part of the Factory Inspectorate Division, non-adherence to health and safety rules and lack of durable gadgets. Mere negligence on the part of the workers has been realised as the main causal factor for most accidents.

During the fieldwork study, it was realised that repair works or maintenance work was not done routinely until a machine or equipment has broken down i.e. the issue of routine maintenance was not given much attention.

In the case of accidents too, management does not enforce strict compliance to health and safety rules or provisions unless somebody was injured before management's attention is drawn to the need for enforcement of the company's health and safety rules and regulations.

Management's uttermost priority which is increase in output or production has made NDVP Ltd. and for that matter sawmills quite unsafe place to work.

Workers are not given induction training on safety that seems to be bad management practice on the part of management.

Factors such as lack of training, lack of inspection, lack of experts, low level of education and lack of safety equipment are basically responsible for accidents in the company.

The culture (bad safety practices) of the company is also a factor that promotes health and safety problems in the company

6.2 Recommendations

1. Production planning should capture the strong seasonal trends of accidents in production scheduling and institute preventive programmes to minimise accidents in the company during such high-risk periods on the production calendar. As an example operations could be scaled down during the high- risk months.
2. The Maintenance and the Processing departments need special attention by way of safety audits and inspections. This will help identifying any system inadequacies and correct job procedure factors to improve on safety performance. Safety audits and inspection should be carried out unannounced to help promote a high level of safety consciousness.
3. A sustained programme needs to be instituted to train supervisors and employees in hazards identification to make the site more proactive with accidents prevention. Such inductions should focus on re-orientating the employees after the effects of the initial induction and orientation have worn off. Training should be seen as an integral part of management strategy that could promote organisational efficiency and effectiveness. Employees should be made or allowed to attend refresher courses, seminars and workshops periodically.
4. Intensive and aggressive educational programmes need to be embarked upon to deal with social factors and attractions that have serious negative effects on distribution of sawmill accidents. The service of experts like counsellors, psychologists and financial managers could be utilised during seminars and workshops organised for the employees.
5. Management or employers should see it as a responsibility to provide all the necessary health and safety tools, equipment and gadgets to help give protection to employees in the

course of their work. The culture of the organisation should be such that safety consciousness would be promoted to the highest degree. Management of health and safety should be rated equally to that of production.

6. Workers who failed to comply with health and safety guidelines or provisions should be dealt with seriously to help serve as a deterrent to others who want to follow suite.

Workers should be made aware that accident is costly to the company so in order to reduce cost, safety standards, guidelines and provisions should be adhered to, to the letter.

7. The clinic of the company should be well equipped with drugs and competent personnel should be employed to take charge of the clinic for quality health delivery services.

8. The employment of many casual workers should be discouraged by the company. This stems from the fact that, anytime new workers are employed it takes a longer time for them to become conversant with the operations of the company and this contributes significantly to the high accident rates of the company.

9. The Factory Inspectorate Division should try to visit the factories frequently to help root out tendencies that would fuel accidents in the factory.

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APPENDICES

Appendix 1: Factories, Offices and Shops Act, 1970

Arrangement of Sections

PART 4 – NOTIFICATION OF ACCIDENTS

10. Notification of accidents
11. Notification of dangerous occurrences
12. Notification of industrial diseases

PART 5 – HEALTH AND WELFARE

13. Cleanliness
14. Overcrowding
15. Ventilation
16. Lighting
17. Drainage of Floors
18. Sanitary Conveniences
19. Drinking water
20. Accommodation for clothing
21. Sitting facilities
22. Removal of dust or fumes
23. Removal of dust or fumes
24. Taking of meals
25. Protective clothing and appliances
26. Noise and vibrations

27. Prohibition of lifting excessive weights
28. First aid
29. Power to require medical supervision
30. Health and welfare regulations

PART 6 – SAFETY

31. Prevention of fire
32. Fire alarms
33. Safety provisions in case of fire
34. Safe means of access and safe place of employment
35. Floors, passages and stairs
36. Training and supervision
37. Cleaning of machinery
38. Fencing of dangerous machinery
39. Safeguards for transmission machinery
40. Construction and maintenance of fencing
41. Construction and sale of machinery
42. Vessels containing dangerous liquids
43. Self-acting machines
44. Hoists and lifts
45. Hoists and lifts
44. Chains, ropes and lifting tackle
46. Cranes and other lifting machines

47. Register of chains, ropes, lifting tackle and machines
48. Dangerous fumes and lack of oxygen
49. Explosive or inflammable substance
50. Steam boilers, receivers and containers, and air receivers

The following show the details of the factories, offices and shops Act of 1970 or Act 328.

Appendix 2

QUESTIONNAIRE FOR SENIOR/MANAGEMENT STAFF

ON THE TOPIC: EVALUATING HEALTH AND SAFETY PRACTICES IN SAWMILLS; THE CASE OF NDVP, KAASE, KUMASI.

Excuse me:

I am studying for Postgraduate Degree in Health Services Planning and Management at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi.

Would you please mind answering few simple questions about Health and Safety Practices in your company?

1. Name/ID
2. Rank/Position
3. Age of staff.....
4. Education Level.....
4. Sex: Male Female
5. How long have you worked with the company? (Specify)
6. Has the company a health and safety policy? Yes. No.
7. If yes do you think the policy is good and adequate enough? Yes. No.
8. If No, what reason would you assign to t.....
9. Do workers observe proper health and safety practices? Yes No
10. If No, what action does management takes?

11. Are employees provided with proper health and safety facilities? Yes No

12. If No, give reason(s)

13. Does the company has any good H&S training policy? Yes No

14. If No, what do you think is the reason?.....

15. Are workers given induction training whenever they are employed? Yes No

16. Could you please in your opinion tell me the general cause(s) of accident(s) in the company?.....

17. What is the effect of accidents on the individual employee or the company?

.....

Appendix 3

QUESTIONNAIRE FOR JUNIOR STAFF

**ON THE TOPIC: EVALUATING HEALTH AND SAFETY PRACTICES IN
SAWMILLS; THE CASE OF NDVP, KAASE, KUMASI.**

Excuse me:

**I am studying for Postgraduate Degree in Health Services Planning and Management
at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi.**

**Would you please mind answering few simple questions about Health and Safety
Practices in your company?**

1. Name/ID
2. Rank/Position
3. Age of staff.....
4. Education Level
4. Sex: Male Female
5. How long have you worked with the company? (Specify)
6. Do you observe proper health and safety practices? E.g. wearing of goggles,
helmets, boots, etc. Yes. No.
7. Why do you think you refuse to observe safety practices? Lack of effective
supervision Non-availability of safety tools and equipment Management does not
punish victim others (specify).....

8. If No what action does management takes? Suspension Dismissal

Loosing of pay [] others {Specify}.....

9. Were you given induction training on safety when you were first employed?

Yes No

10. If No, why do you think the situation is so?

11. If yes, has the training benefited you in relation to your performance? Yes

No

12. Have you ever witness any accident? Yes No

13. Which type of injury do you usually witness? Cuts Bruises , Fractures

others (specify).....

15. Have you ever been involved in accident relating to your job? Yes No

16. How many times have you been involved in accident relating to your job?

(Specify).....

17. Could you please in your opinion tell me the general cause(s) of accident(s) in the company?.....

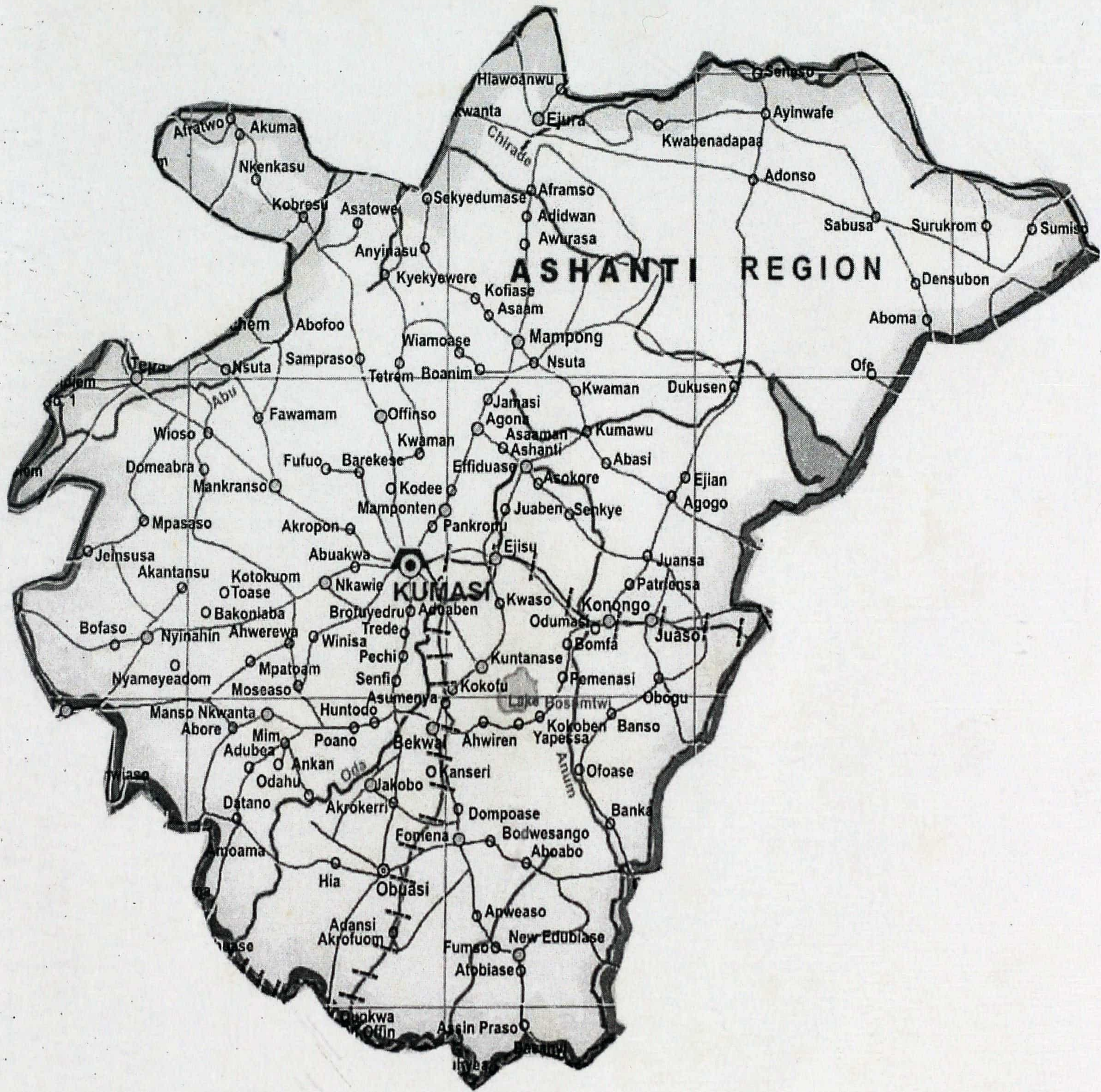
18. Has the accident or injury affected your finances? Yes No

19. If Yes in what way (specify).....

20. Have you been paid any amount by the company in the form of compensation as a

result of the accident or injury? Yes No

MAP OF ASHANTI REGION



Source: Kumasi Metropolitan Assembly 2000