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Title

A DESCRIPTIVE STUDY ON AVAILABILITY AND USAGE OF OCCUPATIONAL HEALTH SERVICES IN KANENGO INDUSTRIAL AREA.

Submitted By

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DECLARATION

I hereby declare that this dissertation is the result of my own work and has never been presented or submitted in candidature for any other degree.

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ABBREVIATIONS

AAOHN	: American Association of Occupational Health Nurses
ADC	: Admarc
BL	: Bakelines Company
BOC	: Boc Gases Company
BW	: Barlows Company
CB	: Chibuku Company
DM	: Dimon Tobacco Company
ILO	: International Labour Organisation
LL	: Limbe Leaf Tobacco Company
NS	: National Seed Company of Malawi
PC	: Portland Cement Company
SB	: Southern Bottlers Company (Sobo)

ABSTRACT

A descriptive study on availability and usage of occupational health services was done in Kanengo industrial area in the city of Lilongwe in order to establish the availability and usage of these services in this industrial area.

The study involved a sample of 10 companies, which were selected through systematic random sampling. Data was collected using a questionnaire in an interview schedule. The data was later shared among 11 researchers who did the data collection and was then analysed using descriptive statistics and description of facts. The study results indicated that most occupational health services are available in Kanengo industries and generally used by workers. The results further revealed that noise from machines, fatigue and lifting are the major hazards in Kanengo while malaria is the common illness.

It can therefore be concluded that Kanengo industries have most of the occupational health services, which are used by most workers.

TABLE OF CONTENTS

Content	Page
DECLARATION	i
DEDICATION	ii
ACKNOLEDGEMENT	iii
ABBREVIATIONS	iv
CHAPTER ONE	
Introduction	1
Background of study	2
Statement of problem	4
Significance of study	4
Objectives of study	5
CHAPTER TWO	
Literature review	6
CHAPTER THREE	
Theoretical framework	13
CAPTER FOUR	
Methodology	16
Ethical considerations	18
Limitations of the study	19
CHAPTER FIVE	
Results of study	20

CHAPTER SIX

Discussion of results 29

Conclusion 34

Recommendations 35

Issues for further research 35

Reference 37

APPENDECES

Appendix I

Appendix II

Appendix III

CHAPTER ONE

INTRODUCTION

Work is part of life for most people. It is estimated that at least one third of the average adults life is spent at work, therefore the workplace has a significant potential influence on individuals health (Stanhope and Lancaster, 1992). Work exposures to hazards such as dust, gases, noise, faulty and heavy machines therefore, will have a detrimental effect on the overall health of the individual (Twinn, Roberts, Andrews, 1996). Exposure to these hazards may cause occupational injuries and illnesses.

In view of all this, many countries worldwide have shown interest in occupational health in order to promote health and safety of workers. Occupational health has been defined as the promotion of highest degree of physical, mental and social well being of workers in all places (International Labour Organisation, 1985). Occupational health programmes aim at promoting the worker's health. These programmes are primarily offered by employer at workplace but the range of services and model of delivering them vary from company to company.

The occupational health services include; surveillance of workplaces for potential hazards, medical examination of workers, treatment of injuries and illnesses, health education, counselling and in-service training. This study on availability and usage of occupational health services was done in Kanengo industrial area in the city of Lilongwe. The study was done by a group of eleven researchers and each went to a different company except for the two who went to the same company. Results were shared among the researchers and this report will indicate results of the 10 companies while focussing more on Limbe Leaf Tobacco Company where the author of this report went for data collection. Limbe Leaf is a big company which processes tobacco and is then exported to other countries. It has two branches, one in Limbe and the other one in Mzuzu. The headquarters is in Kanengo where the study was done.

Background of the study

The exposure of employed people to toxic substances and other hazards is the concern not only of the workers themselves, but also of the employers, health professionals, politicians and many others (Clark and Henderson, 1983). This is reflected by a number of developments which have taken place regarding the health and safety of workers.

Legislation has been passed in many countries including Malawi in the last century t reduce the toll of human suffering and to make working life safer, healthier and more tolerable for able and disabled people of all ages (Clark and Henderson, 1983). The United Nations General Assembly in 1945 recognised the right of all people to just and favourable conditions of work (Annan, 1997). In Malawi an act on occupational health, safety and welfare was passed in 1997 to make provision for the regulation of the conditions of employment in the workplace.

As a result of health and safety legislation, there is an increasing awareness of the need to establish safe practices and working procedures as well as the environment free from occupational hazards. This has resulted in the establishment of occupational health services in order to reduce occupational injuries and diseases which result from poor working conditions and exposure to hazards. In Malawi, unfortunately, these services are not well established (Munthali, 1995). Other large companies like Tobacco Processors have clinics where they provide curative health services for their employees. Some companies provide first aid services only. The ministry of Labour in Malawi carries out routine factory inspections with the aim of improving working conditions. However there is no clear information on what services are available in the companies or industries in Malawi and how these services are used (Munthali, 1995).

Despite the awareness of the occupational health in Malawi, accidents associated with employment are increasing each year. A total of 1,814 industrial accidents were reported in 1996, in which 439 accidents led to permanent disabilities while 65 accidents led to deaths (Workers Compensation office, Lilongwe). In 1998, 58 accidents were reported

from Kanengo industrial area. In 1999, occupational injuries from Kanengo increased to 98.

There are no statistics on occupational illnesses and diseases. Many work related health problems go unreported, but even the recorded statistics are significant in depicting amount of human suffering, economic loss and decreased productivity associated with workplace hazards. This increase in occupational injuries and accidents necessitate the proper establishment and usage of occupational health services.

In view of all this, the researchers decided to conduct a study on availability and usage of occupational health services in Kanengo Industrial Area since it is one of the areas which reports high incidences of occupational injuries.

Statement of the Problem

Kanengo industrial area has a lot of different companies which employ large numbers of adult Malawians which are exposed to different types of hazards like dust, toxic chemicals, machines due to the type of work and raw materials used. This is evidenced by the increasing incidences of occupational injuries reported each year. These injuries can be reduced through occupational health services which are properly used. In Malawi there is no literature regarding the situation of occupational health services in Kanengo and this compelled the researchers to conduct this study in order to establish the stand of occupational health services in Kanengo Industrial Area so as to find ways of improving the situation.

Significance of the study

The study results will reveal the situation of occupational health services in Kanengo industrial area. This information will be used by Ministry of Labour, Ministry of Health and occupational health workers to improve these services and to properly establish the lacking services.

The findings will also help individual companies to know the services which are lacking in their workplaces and this will encourage them to establish the lacking ones and improve the existing services.

The study results will also be used as basic information by other researchers from which further studies on occupational health will be done.

Objectives of the study

General Objective

The main objective of this study was to establish the availability and usage of occupational health services in Kanengo Industrial Area.

Specific Objectives

1. To identify occupational health hazards that exist in Kanengo Industries.
2. To identify the occupational illnesses and injuries that occur in Kanengo Industries.
3. To determine the availability of curative services and their usage.
4. To determine the provision of preventive occupational health services i.e. health education, counselling, in-service training of workers, surveillance of workplace, provision of protective clothing.
5. To determine usage of preventive health services.
6. To find out if medical examinations of workers are done.
7. To find out if Kanengo Industries have any health and safety policies and safety committees.

CHAPTER TWO

LITERATURE REVIEW

Occupational health hazards

Workers in different workplaces are subjected to different types of hazards which can result into occupational diseases and injuries (Munthali, 1995). Occupational hazards include chemicals, physical hazards, biological hazards, ergonomic hazards and psychosocial hazards (Stanhope and Lancaster, 1992).

Chemicals like gases, liquids, dust may cause damage locally at site of contact or be absorbed into the body causing systematic effects. For example, prolonged inhalation of certain dusts like tobacco dust, causes impairment of lungs leading to respiratory tract infections like tuberculosis and pneumonia (Twinn et-al 1996).

Physical hazards are hazards that may cause physical damage or injury and these include exposure to noise, extreme temperatures and pressure, vibrations. Extreme noise causes impairment of the eardrum leading to hearing problem (Twinn et-al, 1996). Extreme heat may cause muscle cramp and heat strokes and in very extreme cases workers may collapse due to the raised body temperature and loss of body fluids (Twinn et-al, 1996).

Mechanical hazards include use of machines which predisposes workers to different types of injuries ranging from minor cuts to chopped fingers or any part of the body (Twinn et-al, 1996).

Biological hazards may be viral, bacterial or fungal. These organisms can cause both local or systemic infections. These infections are very common to workers who work in medical institutions or laboratories. (Clark and Henderson, 1983).

Ergonomic hazards include poor design of machinery or processes which increases fatigue for the operator or worker and this predisposes the worker to accidents (Clark and Henderson, 1983).

Another type of occupational hazard is psychosocial which include poor personal relationships which can lead to emotional stress among workers and this affects the health of workers physically and psychologically. Exposure to all these hazards may cause accidents, injuries, diseases and other ill health conditions.

Occupational Injuries and Diseases

Occupational injuries and diseases arise out of or in the course of work (Clark and Henderson, 1983). Occupational injuries are a consequence of interactions between the physical, social environment and the individual and many injuries are potentially foreseeable and preventable (Carter and Menckel, 1997). The main causes of accidents in industries are handling and lifting, closely followed by slips, strips and falls (Health surveillance executive, UK, 1993). Accidents at work cause more time lost than occupational diseases (Clark and Henderson, 1983). Time lost due absenteeism caused by occupational illness and injuries reduces the productivity of the workers and in the long run reduces productivity of the company as a whole (Darton, 1984). In Britain reports from Central Statistical Office (1979) showed that during 1978-79, benefits were awarded to nearly 11,000 cases of disease and industrial injury. Benefit was paid for over 15 million days off work due to industrial accidents, not counting those awarded disablement and death benefits (Darton, 1984).

International Labour organisation (ILO) estimates were that about 1.1 million people die at work every year. About 335,000 deaths are caused by occupational accidents and the rest by work related diseases and that 250 million accidents occur every year causing absence from work (Munthali, 1995).

Many occupational diseases take a long latent period before onset of symptoms and in some instances, the signs and symptoms become evident after repeated exposures to a particular hazard. In such cases, it becomes increasingly difficult to link the illness with the cause (Clarkand Henderson, 1983). Occupational diseases include pneumoconiosis, asbestosis, and tuberculosis.

Non-occupational diseases can also be exacerbated by some aspects of the working environment, for example chronic bronchitis can be exacerbated by working in a dusty environment (Clark and Henderson, 1983). In developing countries, the major occupational health is concerned with ordinary diseases that workers like everybody else get at home and bring to work. Diseases like malaria, sexually transmitted diseases are very common in workplaces (Glanville et-al, 1979).

Treatment Services

Treatment services at work usually extend beyond first aid and include treatment of both occupational and non-occupational conditions (Perrot, 1984). A good treatment service is an essential part of any occupational health programme particularly in developing countries where general medical care is limited (Glanville et-al 1979). Many industries go beyond treating only job-related illnesses and conditions to treatment of a variety of major and minor conditions. The rationale is that any health problem, physical or emotional may serve to impair the employee's job performance (Clark M.J., 1984). It should be recognised that in companies where access to emergency service and departments is difficult, a treatment service may be appropriate (Twinn et-al, 1996).

In Malawi, many workers report to government hospitals, Christian Hospital Association of Malawi and private clinics for treatment (Munthali, 1998). This indicates that many companies do not provide medical or treatment services in their workplaces.

First aid is an emergency or initial care given to all ill or injured persons (Zingeni, 1998). Employees trained in first aid apply emergency treatment at their workplace and this

prevents escalation of physical damage for example, blood loss (Stanhope and Lancaster, 1992). In Malawi, an act on safety and welfare of workers (1997), stipulates that every workplace should have a first aid box which is under the charge of a trained first aider who is readily available (Work Safety Act, 1997).

Mwakajiga (1992) conducted a study in West Africa on first aid activities in industries. He recommended that employees should keep first aid activities up to date and should conduct courses through Red Cross Society to the ones selected to take care of the first aid kit.

Medical examinations of workers

Medical examinations of workers is the screening of the workers to identify potential and actual health problems of the working population so that they can be prevented or treated. Surveillance of workers health include pre-placement examinations, periodic examinations and special examinations (Twinn et-al, 1996).

Pre-placement examinations are done to determine suitability of an employee for a particular job from the viewpoints of risk to the applicant's health and the health and safety of other workers and members of the community (Twinn et-al, 1996). The other reasons for doing these examinations are to detect untreated pathological conditions and asymptomatic diseases and also to provide baseline data against which any future findings or routine examinations can be compared (Twinn et-al, 1996).

Periodic examinations are essential in the early detection of intoxication or any other occupational conditions like pulmonary diseases (Granville et-al, 1979).

Special examinations are done to determine whether or not the worker can still do his previous job after a severe injury, serious illness or prolonged absence from work (Granville et-al, 1979).

Kaminyoge (1998) reported that in some cases it would be mandatory for the workers to undergo pre-employment medical examinations and thereafter periodic examinations in order to determine if the worker has contracted any illness associated with a certain hazard in the working environment. Such workplaces include cotton industries, tobacco industries where workers are continuously exposed to hazards.

Occupational Safety

1. **Surveillance of Workplace**

Surveillance of the working environment involves identification and assessment of occupational hazards in the workplaces which can affect the health of the workers (Munthali, 1995).

During workplace surveillance, the surveyor becomes knowledgeable about the work processes and materials used, the requirements of various jobs, the presence of actual or potential hazards and the work practices of employees (AAOHN, 1998). Measures on how workplace hazards can be controlled are communicated to occupiers of the premises (Munthali, 1995). A study done by Rantannen (1992), reported that surveillance of the environment for identification of hazardous conditions and assessment of their risks to workers is a key activity in the preventive occupational health services. In Malawi, the ministry of Labour and Manpower Development carries routine factory inspections with the aim of improving working conditions (Munthali, 1995).

2. **In-service Training, Health Education Counselling**

The importance of health education in prevention of illness and injury in the workplace cannot be overstated (Clark and Henderson, 1983). Occupational health workers are in an ideal position to initiate health education programmes and constant

contact with employees and employers will enable evaluation of any information given (Clark and Henderson, 1983). Health education in the workplace may also include programmes of general health care, for example, prevention of AIDS (Twinn et-al, 1996).

Training and instruction in various aspects of health and safety are obviously essential if people are to work effectively and to understand the reason behind the development of codes of practice and specific procedures (Clark and Henderson, 1983). According to Sakari (1997), trained manpower is a pre-requisite for development of occupational health services in both industrialised and developing countries hence the rising need for such activities.

Workers should be trained to improve their competence and skills and should be educated in possible health hazards concerning their work in order to prevent accidents and injuries resulting from work (Sakari, 1997). With the rapid changes in working life caused by globalization, new technologies and job content, training and education is very necessary in the workplace (Rantannen, 1997).

Occupational health workers are expected to provide some form of counselling service to support people who are emotionally upset, those suffering from mental ill-health and to give general and specific health advice on a wide range of personal and group problems which may extend beyond the workplace (Clark and Henderson, 1983). A counselling service is beneficial to the company as problem shared is often on its way to being solved, thus allowing the employer or employee to concentrate on the job at hand (Stanhope and Lancaster, 1992).

3. **Protective Equipment / Clothing**

Protective equipment is the equipment which is given to workers to use for protection of hazards. For example, workers in a tobacco factory are provided with masks to prevent inhalation of tobacco dust which can be hazardous to their lives.

However, Carter and Manckel (1997) reported that use of personal safety equipment is an option to be considered when other attempts to eliminate or reduce injury in the workplace have failed. Personal protective equipment should be viewed as a complementary measure to other preventive activities rather than as a sole and sufficient counter measure. This is so because most workers do not use protective equipment even when danger is obvious (Carter and Manckel, 1997). Some occupiers are aware of the risks their workers are exposed to but for reasons best known to themselves, fail to provide protective equipment (Tembo, 1995). It is recommended that those expected to use protective equipment must understand why the equipment is necessary and should be trained as to how, when and where the equipment is appropriate (Carter and Manckel, 1997).

Summary

From the literature reviewed, it has been shown that every workplace has got its own hazards which need to be controlled in order to prevent occupational injuries and diseases. The literature also explains the importance of occupational health services in the prevention of occupational injuries.

The literature also shows the increase in occupational injuries and diseases despite the awareness of occupational hazards.

CHAPTER THREE

THEORETICAL FRAMEWORK

Vulnerable populations model by Flaskerud and Winslow (1993) was used to guide this study. Vulnerable populations is defined as social groups who experience limited resources and consequent high relative risk for morbidity and premature mortality (Flaskerud and Winslow, 1993). In this case workers are viewed as vulnerable populations who are continuously exposed to occupational health hazards like fumes, dust, chemicals and faulty equipment in the workplace. These hazards may lead to occupational illnesses and injuries which may be fatal to the workers.

The model demonstrates that resource availability, relative risk and health status are related. Figure 3.1 shows how these three variables are related. In this model, resource availability is viewed as the availability of socioeconomic and environmental resources. In this situation, resource availability refers to the availability of occupational health services and their usage. Relative risk is the ratio of poor health among groups who do not receive resources and are exposed to risk factors as compared to those groups who receive resources and are not exposed to these risk factors. In this context, relative risk is refered to the ratio of poor health among workers who do not receive occupational health services and are exposed to occupational hazards as compared to those workers who receive occupational health services and are not exposed to occupational hazards. In the model health status of the community is stipulated in disease prevalence, morbidity and mortality rates. Health status of workers is stipulated in incidences of occupational illnesses, injuries as well as deaths which result from exposure to occupational hazards.

The model assumes that the availability of resources both socioeconomic and environmental, influences people's ability to avoid health risks and its consequences. Consequently, this study assumes that availability of occupational health services which are properly used, influences the ability to minimise exposure to occupational

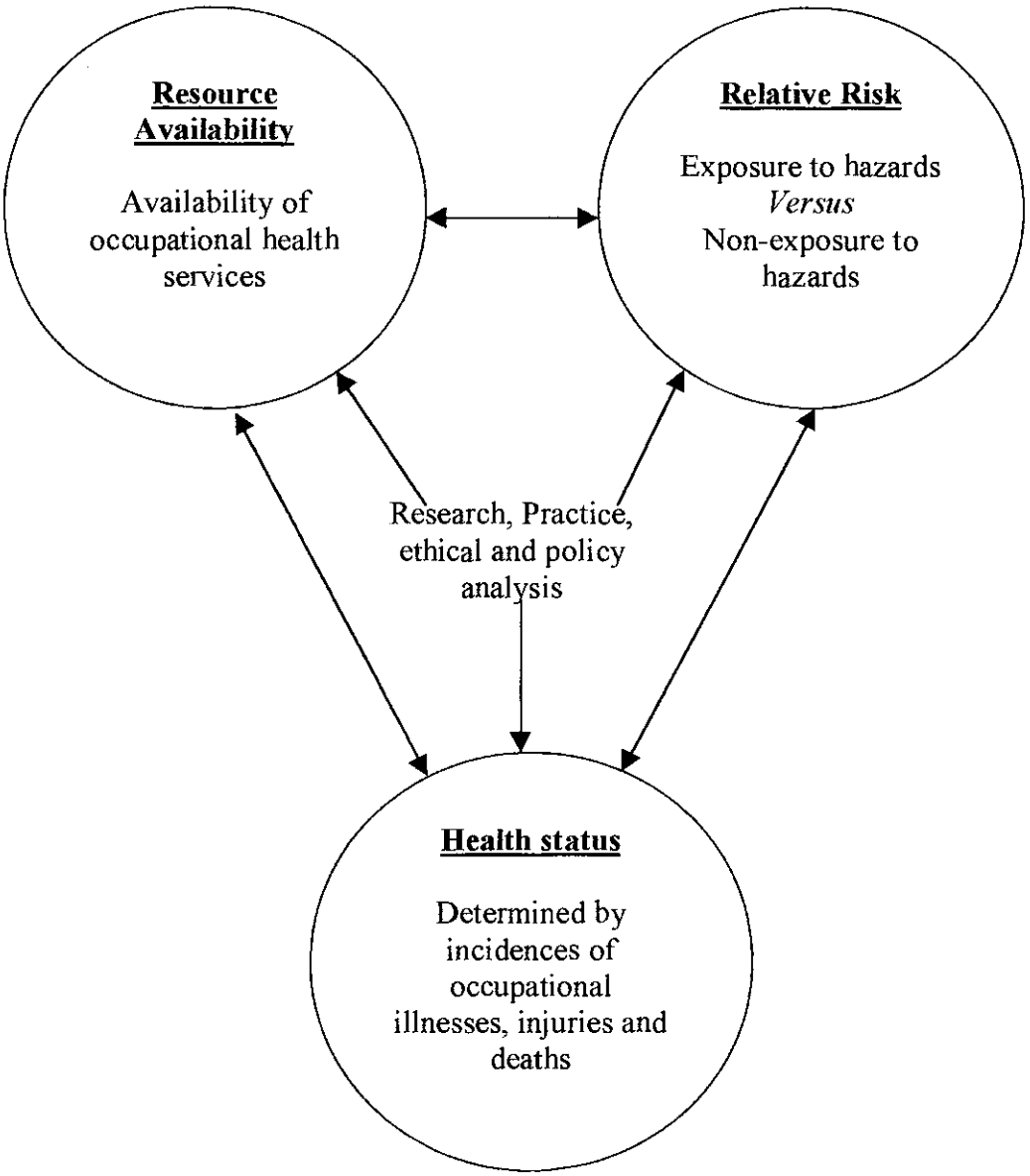
hazards hence reduction in occupational illnesses, injuries and deaths. In this way health status of workers is improved.

The model also portrays that research, practice, ethical and policy analysis helps to intervene at each point in between the interrelationships of resource availability, relative risk and health status. Research in the field of occupational health will help to generate information which can be used to develop policies and other strategies which aim at improving the health status of workers. Research findings can also be used to improve occupational health services which aim at reducing exposure to hazards.

Through practice, workers are provided with the necessary occupational health services like treatment services, health education, counselling. Utilization of these services by workers will also influence the ability to minimise exposure to hazards hence reducing occupational illnesses, injuries and deaths.

Ethics also intervene at each point and in between the interrelationships. If ethics are applied in the workplace, workers can be protected because their right to good health will be observed in the workplace, employers will make everything possible to prevent work exposures to hazards by incorporating occupational health services in their workplace hence reducing occupational illnesses and injuries.

Fig. 3.1 : Vulnerable Populations Model



Source : Flaskenid and Winslow (1993)

CHAPTER FOUR

METHODOLOGY

1. Research Design

In this study, a descriptive study design was used. This is a pure descriptive study because it does not look at relationships between variables but rather looks at the status of each variable independently (Polit, Hungler, 1983). There are multiple variables in this study. The purpose of this study is to describe each variable objectively as it naturally occurs. The variables in this study include: occupational health hazards that exist in Kanengo, occupational diseases and injuries, and existence of occupational health services and their usage in Kanengo industries. The occupational health services which were looked at include; treatment services, surveillance of workplace, surveillance of workers' health, health education, In-service training, counselling of employees and provision of protective devices.

2. Setting

The study was done in Kanengo industries. Kanengo is in the city of Lilongwe in the central region of Malawi. It is one of the biggest industrial areas in Malawi. The industries which were studied include; Sobo, Limbe Leaf Tobacco Company, Dimon, Admarc, National Seed Company of Malawi, Barlows, Bakelines, Portland Cement Company, Chibuku Products and BOC company.

3. Sampling

A sample of 11 companies was chosen using stratified random sampling. The stratification was done to enhance representation of the population sample. Random sampling was used because it is a probability sampling which put all companies in the population sample at an equal chance of being selected thereby increasing the

likelihood that the resulting sample will be representative of the population (Polit and Hungler,1991). Random sampling avoids conscious and unconscious biases.

In choosing the, a list of 32 companies in Kanengo industrial area was obtained from the Ministry of Labour in Lilongwe. The companies were then put in 5 categories namely; food processing, tobacco processing, storage and selling, mechanical electrical companies. Companies were listed in their categories according to how they appeared on the list from Ministry of Labour, for example first company on the list was put first in its category to prevent biases. Two companies were selected from each category by taking the first and third company in each category. The eleventh company was chosen by taking the fifth company in the category which had the highest number of companies

Another set of eleven companies were chosen from the categories by taking the second and fourth company in the categories and the eleventh company was chosen by taking the sixth company in the category which had the highest number of companies. This was done in order to cover up any withdrawals from the first sample.

Ten companies finally responded and this came from both first and second sample because of withdrawals. Many companies withdrew because they closed during the time of data collection since it was Christmas and newyear season. The ten companies came from the four categories. Even the ten companies were representative of the study population because it represents about 30% of the study population.

4. Data Collection

Data collection was done from 5th to 7th of January in the year 2000. The data was collected by a group of 11 researchers. Each researcher went his or her own company except for the two researchers who went to the same company (Limbe Leaf).

Data was collected using a questionnaire which was structured by the researchers themselves. See appendix III. The questionnaire had both closed and open ended questions which focused on occupational health hazards, occupational diseases and injuries and occupational health services. The questionnaire was reviewed by the supervisor to detect any technical difficulties. The questionnaire was also pre-tested in five different companies outside Kanengo to ensure its reliability.

The questionnaires were filled by researchers themselves during interviews which were conducted right in the companies. Interview schedules were used because they are less costly, response rate is high and clarification of questions is very possible.

5. Data Analysis

Data from different companies was shared among researchers. Sorting and coding of data was done manually using spread sheets. The data was then presented in tables and bar graphs. Description of facts was also done for easy analysis and interpretation of findings. The results indicate findings from all 10 companies with much emphasis on Limbe Leaf Tobacco Company.

6. Ethical Considerations

Permission to carry out the study in the companies was sought through letters which where addressed to managers of each company, (See appendix I). Permission to conduct the study was also granted through letters, (See appendix II). The respondents at each company were asked to give a verbal consent before answering the questionnaire. Confidentiality of the information was ensured by not indicating names of respondents on the questionnaires. Questionnaires were also destroyed soon after use to ensure confidentiality of the information.

Limitations of the Study

The study was done in Kanengo industries only and this means that generalisation beyond sample population can be viewed with caution. There was very limited time for data collection so little information about each company was obtained.

In some of the companies, only two respondents were used because of limited time or some other inconveniences, so the results of some companies may not be as accurate as they could be.

CHAPTER FIVE

RESULTS

Types and Size of Companies

The study sample included different types of companies which produce different types of products. Some of the companies do not actually produce things but they offer some services.

Table 1 : **Name, Size and Products or Services of the Companies.**

Name of Company	Number of Employees	Major Products/Service
LL	2211	Tobacco
DM	1612	Tobacco
SB	537	Drinks e.g. Coca-Cola, Fanta
ADC	456	Storage of maize, beans and fertilizer
CB	150	Drinks e.g. Mahewu, Chibuku
BL	150	Biscuits
NS	77	Maize and Tobacco seeds
PC	17	Storage and selling of cement
BW	14	Selling caterpillars and storage parts
BOC	7	Selling gases e.g. nitrogen and oxygen

Table 1 shows that the study included big, medium and small companies. The big companies include LL and DM which are both tobacco companies. The medium sized companies include SB, ADC, CB, and BL. The small ones are NS, PC, BW and BOC. LL is the biggest out of the 10 companies. The companies which produce food fall among the medium and small companies.

Occupational hazards, accidents and illness

Table 2 : **Major occupational hazards**

(n=10)

Occupational Hazard	Number of companies where present	Company Name
Noise from machine	7	ADC, DM, NS, BOC, LL, SB, CB
Fatigue and lifting	7	PC, NS, BOC, LL, SB, CB, ADC
Dust	6	PC, NS, LL, CB, DM, ADC
Chemicals	2	DM and LL
Hot processes	2	LL and BL
Heavy machines	2	BL and ADC

Table 2 shows that the most common hazards are noise from machines and fatigue and lifting. The second most hazard is dust which was reported in both tobacco companies. Dust was also mentioned at PC, NS and ADC where processing of products produces dust. Only 20% of the sample reported heavy machines, hot processes and chemicals as health hazards. The two big companies which mostly use machines for processing their products did not mention this as a health hazard.

Table 3 : **Occupational Accidents, Causes and their Outcomes**

Major occupational accidents	Percentage	Name of companies where present
1. Injuries from machines (cuts, bruises, chopped fingers).	40%	LL, BW, DM, SB
2. Road traffic accidents	20%	CB, SB
3. Fractures due to falls or things falling on workers.	20%	ADC, LL
4. Chemical injuries	10%	SB
5. Burns.	10%	BL
Causes of accidents		
1. Negligence on part of workers	80%	LL, CB, BW, PC, SB, BL. ADC, DM
2. Lack of protective clothing	40%	ADC, DM, SB, LL
3. Increased work load	20%	ADC, LL
4. Little or no skill in workers	20%	ADC, DM
5. Faulty equipment	10%	LL
Outcome of accidents		
1. Sick leave	80%	LL, BL, PC, BW, SB, ADC, DM
2. Compensation	50%	LL, CB, SB, ADC, DM
3. Disabilities	40%	LL, ADC, DM, BW
4. Loss of life	20%	BW, DM
5. Insurance proceedings	10%	CB

Major Occupational Accidents

Table 3 shows that injuries from machines are the most common accidents as presented by 40% of the sample. LL and DM mentioned these as major accidents yet they did not report machines as a health hazard. Chemical injuries and burns are the least common accidents.

Causes of Accidents

80% of the sample indicated negligence on the part of workers as the major cause of accidents. Only CB and BOC companies did not mention this as a major cause of accidents. Faulty equipment was only mentioned in one company, LL as one of the causes of accidents.

Outcome of Accidents

The results indicate sick leave as the common outcome of accidents as reported by 80% of the sample. Compensation is the second most common outcome. Loss of life was reported in two companies only as outcome of accidents.

Major Illnesses that Cause Absence from Work

90% of the sample reported malaria as the most common illness while 30% (LL, DM, PC) reported respiratory tract infections as one of the major illnesses. 20% (LL, NS) indicated general body pains and headache as one of the major illnesses.

Table 4 : **Days Lost due to Illnesses and Accidents in a Year**

Name of company	Days lost due to illnesses/year	Days lost due to accidents/Year	Total days lost/year
LL	300	200	500
DM	Not specified	Not specified	9160
SB	< 10	< 20	< 30
ADC	No records	No records	-
CB	500	50	550
BL	15	No records	-
NS	Nil	Nil	-
PC	68	Nil	-
BW	28 - 42	56 - 70	84 - 112
BOC	Nil	Nil	Nil

Table 4 shows that DM lose a lot of days in a year than LL which is the biggest company and the difference is just too big. CB also rates slightly higher in the number of days lost in a year than LL. BOC and NS reported that they do not lose even a single day in a year due to accidents and illnesses. ADC did not have records on these statistics and BL did not have records on days lost due to accidents.

Availability of Curative and Preventive Occupational Health Services

Table 5: **Curative, Preventive Services and Health Facilities**

(n = 10)

Service/facility	Number of companies where present	Company name
1. First aid box	10	All 10 companies
2. In-service training	10	All 10 companies
3. Health and accidents records	10	All 10 companies
4. Provision of protective clothing	10	All 10 companies
5. Surveillance of workplace	10	All 10 companies
6. Sickness benefits scheme	9	Except BL
7. Health education	8	Except LL, DM
8. Counselling	8	Except BOC, BL
9. Safety and health committee	6	LL, NS, PC, CB, BOC,DM
10. Clinics	4	LL, DM, SB, ADC
11. Safety and health policy	6	BOC, NS, PC, SB, ADC, DM
12. Toilets	10	All 10 companies
13. Bathrooms	10	All 10 companies
14. Drinking water	10	All 10 companies

Curative Services

Table 5 shows that only four companies out of the ten have clinics where treatment of minor illnesses and injuries is done. The four companies are the two big companies (LL and DM) and two medium companies (SB and ADM). Other activities at the clinics include health education, medical examination of workers, counselling, laboratory investigations and family planning.

All the ten companies indicated that they have a first aid box and these boxes contain the basic items like bandages, spirit, plaster, drugs like aspirin paracetamol. At LL, the first aid box contained crepe bandages, gloves, gauze, razor blades, plaster, sutures, eye pads, tongue depressor and drugs like aspirin and paracetamol.

Preventive Services

1. **In-service Training**

   100% of the sample reported that they provide in-service training of workers. Almost all the respondents reported that they feel that information obtained from these trainings is used by workers.

2. **Provision of Protective Clothing**

   100% of the sample reported that protective clothing are provided to workers. Some respondents reported that other workers do not use the protective devices for the following reasons:

   - Masks make them feel hot and uncomfortable.
   - Some workers sell the devices
   - Gloves are hot.
   - No reinforcement to use the devices

3. **Surveillance of Workplace**

All the ten companies conduct surveillance of the workplace. This is usually done by the Ministry of Labour and Malawi Bureau of Standards. At LL, CB and BL, surveillance of workplace is done every two to three months. At NS, it is done monthly while at SB and PC it is done every six months. At DM and BW it is done once a year while at BOC it is done once in two years.

4. **Health Education and Counselling**

80% of the sample provide health education and counselling. LL and DM do not provide health education to their workers while BOC and BL do not provide counselling to their workers. Health education provided is mostly on hygiene while counselling on personal issues like relationships and bad behaviour at work. Almost all respondents in the eight companies reported that information obtained from health education and counselling is used by workers.

5. **Sickness benefit Scheme**

90% of the sample have sickness benefit scheme for their workers. These benefits include paying of hospital costs, MASM, free services at clinic in companies with clinics, provision of transport to hospital when workers fall sick. LL provide the three benefits to its workers except paying of hospital costs.

6. **Safety Committee and Health and Illness Policy**

60% (LL, NS, PC, SB, BOC, DM) of the sample have safety committees which look after the health and safety of workers in the workplace.

60% (BOC, NS, PC, SB, ADC, and DM) have safety and illness policies which help to safeguard the health of workers. LL does not have this policy.

7. **Health and Accidents Records**

100% of the sample reported that they keep health and accidents records. Although it is like this some companies were not able to give some information regarding these records for example ADC did not give the number of days lost in a year due to accidents and illnesses.

Medical examinations of Workers

80% of the sample conduct pre-placement examinations, 60% conduct special examinations while 50% conduct period examinations. At DM and NS, periodic examinations are done to kitchen staff only every six months. The reason being that the kitchen staff handle food for many workers so to prevent transmission of infections from the kitchen staff to other workers, the kitchen staff have to undergo examinations every six months.

At SB, CB and BL, periodic examinations are done to every worker every six months. At PC, pre-placement examinations are done to managers and supervisors only while special examinations are done to everybody. LL does not provide periodic examinations and no reason was given. DM does not provide special examinations. Other companies which do not provide special examinations are BOC, NS, BL and ADC. The companies did not give reasons for not doing these examinations. The other company which does not provide pre-placement examinations is BL and no reason was given.

CHAPTER SIX

DISCUSSION OF RESULTS

Occupational Health Hazards

The study has revealed that noise from machines, fatigue and lifting are the common major health hazards in Kanengo Industries. This is evidenced by the fact that 70% of the sample reported these as major hazards. This means that workers in the seven companies are vulnerable to these hazards. Noise from machines may be common because machines are almost used in every company due to the increase in technology. Fatigue and lifting may arise out of long hours of work and increased workload.

The results have further revealed the relationship between workplace activities and health hazards present in a particular working environment. This is shown by the fact that five companies, namely ADC, LL, DM, PC and CB reported dust as a hazard and this dust is related to the materials used and processes taking place at these companies. For example, at LL and DM the dust is from tobacco and its processing. At PC, it is from cement while at NS, it is from chemicals applied to seeds. This result is in line with what Clark and Henderson (1983), said that the risks inherent in each job and workplace vary according to the nature of activities undertaken in that particular workplace. This implies that workers as vulnerable populations, are exposed to different types of hazards depending on the type of work they do.

It is also shown by the results that heavy machines and chemicals are not common hazards in Kanengo yet these things are mostly used in many companies. This is evidenced by the fact that only 20% of the sample indicated these as major hazards. It is surprising that big companies like LL, DM which use mostly machines for processing of their products did not mention heavy machines as a hazard. This may mean that workers and employers do not recognise these as health hazards if not properly used. This idea is supported by the fact that 40% of the sample reported injuries from machines as common

injuries yet only 20% indicated heavy machines as a hazard. This really shows that heavy machines are not recognised as occupational health hazard by most workers.

Occupational Accidents and Illnesses

The results also show that negligence on the part of workers is the major cause of accidents in Kanengo industries. This means that workers play a major role in the occurrence of injuries in Kanengo.

It may be that workers do not have the skills in using machines or other equipment or that workers do not use precautionary and safety measures during their work as already indicated in the results that some workers do not use protective equipment for reasons known to themselves. It is therefore important to find out why the situation is like this in order to reduce incidences of occupational accidents. The other reason may be that the workers do not realise the hazards inherent in their workplace as such they do not take any precautionary measures to protect themselves from the hazards.

Sick leave was found to be the major outcome of accidents in Kanengo Industries as reported by 80% of the sample. This is also portrayed by the increase in number of days lost in the companies due to these accidents. For example DM reported 9160 days lost due to accidents and illnesses in a year while LL reported 200 days lost due to accidents in a year. This means that company productivity is being affected by this loss of days due to accidents. In addition, workers' health status is also being affected by these accidents. Reduced incidences of accidents will therefore reduce number of days lost in a year thereby increasing productivity of the company. Reduced accidents will also improve the health status of workers.

The study has further shown that Malaria is the common illness in Kanengo industries. This is usually a non-occupational disease which is common everywhere in Malawi. This means that most workplaces deal with this non-occupational disease other than occupational diseases.

However the study shows that occupational diseases still exist in Kanengo industries, despite the fact that malaria is common. Respiratory tract infections like TB, pneumonia were mentioned in three companies as one of the common illnesses. These companies include LL, DM and PC where dust is one of the major occupational health hazards. These illnesses were not mentioned in three other companies where dust is also a common health hazard. General body pains and headache may also come as occupational illnesses but workers may not look at them as occupational illnesses because most diseases like malaria also present with the same signs. This is evidenced by the fact that these illnesses were mentioned in two companies only. This may mean that workers do not really link illnesses to their work.

Curative and Preventive Services

1. **Curative Services**

The study results have shown that only four companies out of ten have clinics and these are generally big and medium companies. This is in line with what Munthali (1995), said that in Malawi, some large companies provide full health care services for their employees. This means that many companies especially small ones do not provide these services and they rely on other clinics or hospitals outside their workplace. Clinics provide both curative and preventive services like treatment of minor illnesses, health education counselling which help to promote the health status of employees who are vulnerable to various types of hazards in the workplace.

However it was found that almost each company had a first aid box. This may be so because it is enforced by the laws of Malawi that each workplace should have a first aid box which is available to every worker at all times. The first aid box also help in preventing escalation of life threatening conditions, like blood loss thereby promoting the health status of employees.

2. **Health Education, Counselling and In-service Training**

The study results have shown that in-service training is done in most companies as reported by 100% of the sample. This means that workers are trained in their work and yet these same workers contribute more to the occurrence of accidents. This may mean that workers are not given enough information on prevention of accidents or that workers are not reinforced to use the information they get from in-service training.

It has also been shown that health education is also provided in most companies as reported by 80% of the sample. It is therefore surprising to see that big companies like DM and LL do not provide health education to their workers. It is possible that the health education is given to individual workers at the clinics but not to group of workers. The result have further indicated that counselling of workers is done in most companies. This means that workers' problems are dealt with accordingly.

Although these three preventive services are available, it seems workers do not use the information they get as evidenced by the fact that negligence on the part of workers is the main cause of accidents in the workplaces of Kanengo industrial area. This can be proved by finding more on what information is provided to workers and if at all there is reinforcement.

3. **Protective Equipment / Devices**

The study has revealed that protective clothings are provided to workers in almost every company as indicated by 100% of the sample. These protective clothings reduces exposure to occupational hazards thus reducing occupational injuries and illnesses thus improving the health status of employees as indicated in the theoretical framework. The problem comes on usage of these devices. The results show that some workers do not use the device for their own reasons. For example, some workers refuse to wear protective clothings even where danger is obvious. This

means that protective clothings cannot be solely relied on prevention of occupational accidents and illnesses. Clark and Henderson, (1983) recommended that protective clothings should be considered the last method of controlling hazards because its effectiveness depends on employee's willingness and ability to use them.

4. **Surveillance of Workplace**

The study results show that surveillance of workplace for hazards is done in all the ten companies. This may be so because the Ministry of Labour conducts workplace surveillance in many companies including those in Kanengo. However there is a varying range in the frequencies of these workplace surveys. In some companies especially those which produce foods, surveillance is done very often. This may mean that in some companies the surveys are done by internal personnel or other organisations apart from the Ministry of Labour because the ministry has a heavy workload.

5. **Medical Examinations of Workers**

The study results show that most companies conduct preplacement examinations of workers. Almost half of the companies conduct periodic examinations. LL does not provide periodic examinations of its workers and DM provide these examinations to kitchen staff only yet many workers are continuously exposed to tobacco dust which may cause respiratory infections after prolonged exposures. This may be the reason why there are no records on occupational illnesses in Malawi since there is no much effort being done in the companies to find out the cause of illnesses in their workers. Periodic examinations are one way of finding out the cause of illnesses in workplaces or the effects of work exposures to hazards.

6. **Safety Committee and Health Illness Policy**

The results indicated that almost half of the ten companies have safety committees, health and illness policies which aim at promoting the health status of workers. Health and illness policies guide the companies in safeguarding the wellbeing of workers thus promoting their health status as discussed in the theoretical framework. The results do not say whether the policies are known to all workers and if they are followed. It is therefore difficult to determine their effectiveness.

CONCLUSION

The study has revealed that occupational hazards exist in Kanengo industries and these vary according to the type of activities taking place in a particular workplace. There is also an indication that workers do not realise some of the hazards inherent in their workplace. There is really need for workers to know the hazards in their workplace for better control of these hazards.

The study also indicate that accidents and illnesses are occurring in Kanengo industries although the major illness is non-occupational. However, occupational diseases also exist in Kanengo. Negligence on the part workers has been found to be the major cause of accidents in Kanengo industries. There is really need to find out why the situation is like this.

The study results have also indicated that some occupational health services are readily available in Kanengo. For example, first aid, health education, in-service training, preplacement examinations of workers. However there other services which are available in few companies especially big ones, for example clinics, safety committees, health and illness policy. There is really need to emphasise the importance of occupational health services for proper establishment and usage.

RECOMMENDATIONS

1. Workers should be well educated about health hazards inherent in their workplaces.

2. Workers should be educated on safety measures and their responsibility in prevention of occupational injuries and accidents through in-service training.

3. Companies which do not conduct periodic examinations of workers should consider starting doing it especially where workers are continuously exposed to hazards like in tobacco companies.

4. Use of protective clothing should be reinforced among workers if they are to be effective.

5. Companies should consider establishment of the lacking occupational health services. For example opening clinics.

6. Ministry of Labour should initiate programmes where it can be assessing companies for available occupational health services and their usage and also reinforcing establishment of the lacking services.

ISSUES FOR FURTHER RESEARCH

There is need to find out why workers are so negligent or why they play a major role in occurrence of occupational accidents. This may include finding what information is provided to workers through health education, counselling and in-service training regarding prevention of occupational accidents, injuries and illnesses. This will help to determine if the information is enough or not for proper action.

There is also need to find out who does surveillance of workplace in companies and if results are communicated to workers and employers and if at all the information is used.

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APPENDIX I

Kamuzu College of Nursing.
Private bag 1.
Lilongwe.

December 14, 1999.

The General Manager.
Limbe Leaf Tobacco Company Limited.
P.O Box 40044.
Kanengo.
Lilongwe 4.

Dear Sir Madam.

REQUEST TO CARRY OUT A STUDY ON THE AVAILABILITY AND USAGE OF OCCUPATIONAL HEALTH SERVICES AT YOUR COMPANY.

I am a fourth year student at Kamuzu College of Nursing currently studying for a Bachelor of Science Degree in Nursing. In partial fulfillment of the requirements of my degree in nursing. I intend to undertake a research study on "**Availability and usage of Occupational Health Services at Kanengo Industrial Area**".

The purpose of this letter is to request permission to carry out the study at your company between 5 and 7 January, 2000. I assure you of confidentiality during your participation in the study.

Your consideration will be greatly appreciated.

Yours faithfully.

.....

Edina Matale.

APPENDIX II

LIMBE LEAF TOBACCO COMPANY LIMITED

P.O. Box 40044,
LILONGWE 4, Malawi,
Telephone:
Kanengo: 765 355
Telex: 44350/44740 LEAF
Fax : 765 763/765 889
Email : lltc@malawi.net

7th January, 2000

Miss Edna Matale
Kamuzu College of Nursing
Private Bag 1
LILONGWE

Dear Miss Matale

REQUEST TO CARRY A STUDY AT LIMBE LEAF TOBACCO CO. LTD.

I refer to your letter of 14th December, 1999 in which you made a request to carry a study on the availability and usage of Occupational Health Services at our company.

I am pleased to inform you that management has accepted your request and you may come and conduct the study on the dates you indicated in your letter.

On behalf of Limbe Leaf Tobacco Company, I wish you all the success in your study.

Yours sincerely
For. LIMBE LEAF TOBACCO CO. LTD.

L.F. MPANDO
TRAINEE PERSONNEL MANAGER

APPENDIX III

QUESTIONNAIRE

Research Topic : **Availability and usage of Occupational Health Services in Kanengo Industrial Area**

POSITION OF RESPONDENT .....
NAME OF COMPANY .....
TOTAL NUMBER OF PEOPLE .....
NUMBER OF MANAGERS .....
NUMBER OF EMPLOYEES .....
NUMBER OF FIRST LINE SUPERVISORS .....
NUMBER OF LINE WORKERS .....
NUMBER OF FEMALE WORKERS .....
NUMBER OF MALE WORKERS .....

1. **What are the major products (services) of this company?**

   .....
   .....
   .....
   .....

2. **Briefly describe what happens in the sections concerned the with processing of raw materials/heavy machinery.**

   .....
   .....
   .....
   .....

3. **Very generally how do you make products? Or how are the services rendered?**

   .....
   .....
   .....
   .....
   .....

4. **What do most workers do?**

.....
.....
.....
.....

5. **What are the major health problems or hazards workers face here?**

Noise	**Air**
Chemicals	**Electrical**
Lifting	**Toxic Agents**
Corrosives	**Flammable substances**
Radioactive	**Hot processes**
Fatigue	**Carcinogens**

Others specify

.....
.....
.....

6. **(a) When was the workplace last inspected for potential hazards?**

.....

(b) How often is it inspected?

.....

(c) If the workplace is not inspected what is the reason?

.....
.....
.....

7. **(a) Do you keep records of accidents?**

Yes ☐

No ☐

(b) What are the most frequent type of accidents that occur in this workplace?

.....
.....
.....
.....

(c) What are the causes of these accidents?

Lack of protective clothing ☐

Negligence on the part of the worker ☐

Faulty equipment ☐

Little or no skills in the worker ☐

Others (specify)

.....
.....

(d) What has been the outcome of these accidents?

Loss of life ☐

Sick leave ☐

Disabilities ☐

Compensation ☐

Legal suit ☐

Others (specify)

.....
.....

(e) About how many accidents that occur require first aid in a year?

.....
.....

(f) About how many accidents require the worker to be taken to the hospital in a year?

.....
.....

(g) About how many days are lost due to accidents in a year?

.....
.....

8. (a) What are the major illnesses that cause workers to be absent from work?

.....
.....
.....
.....

(b) How many days are lost due to illness in a year?

.....
.....

9. (a) What protective devices are workers provided with?

.....
.....
.....
.....
.....

(b) Do most workers use the protective devices provided to them?

Yes ☐

No ☐

(c) If no, explain why.

.....
.....
.....
.....

(d) Observe if workers are using protective devices.

.....
.....
.....
.....
.....

10. (a) Do you provide /receive the following services concerning the health and safety of workers? (Tick where appropriate)

	Yes	No
Inservice training	☐	☐
Health education	☐	☐
Counselling	☐	☐

(b) How often do you provide /receive the following;

In-service training .....

Health education .....

Counselling .....

(c) If counseling is done, on what occasion is it done?

.....
.....
.....
.....

11. (a) Do workers /you utilise the information provided to them/you through;(tick where appropriate) .

	Yes	No
In-service training	☐	☐
Health education	☐	☐
Counseling	☐	☐

(b) If no why?

.....

12. (a) Do workers undergo medical examinations; (tick where appropriate).

	Yes	No
On employment	☐	☐
During the time of service	☐	☐

(b) If done during the time of service, how often are the medical examinations done?

	Yes	No
Once a month	☐	☐
Every 6 months	☐	☐
Every 12 months	☐	☐
More than 12 months	☐	☐

13. (a) Do you have a clinic?

Yes ☐

No ☐

(b) If yes, what services are provided at the clinic?

Treatment of minor illnesses ☐

First aid ☐

Health education ☐

Counseling ☐

Medical examinations ☐

Others(specify)

.....

.....

.....

(c) Do all workers have access to the clinic?

Yes ☐

No ☐

(d) If no, why?

.....
.....
.....
.....

14. (a) Do you have a first aid box?

Yes ☐

No ☐

(b) If yes, what does it contain?

.....
.....
.....

(c) Is the first aid box available to all workers?

Yes ☐

No ☐

(d) If no, why?

.....
.....
.....
.....

14. Is there a safety committee in your company?

Yes ☐

No ☐

15. (a) Is there a safety or health and illness policy? (e.g. manual for safety work).

Yes ☐

No ☐

(b) If yes, what kind of things are involved in the policy?

.....
.....
.....
.....

16. (a) Is there a sickness benefit scheme?

Yes ☐

No ☐

(b) If yes, what does it cover?

.....
.....
.....
.....

17. Do you have the following facilities?

Bathrooms ☐

Toilets ☐

Breaks(Lunch and Tea breaks) ☐

Drinking water ☐