

**HEALTH PROBLEMS EXPERIENCED BY WORKING  
WOMEN IN INDUSTRIAL OCCUPATIONS: A STUDY OF  
SELECTED INDUSTRIES IN NAIROBI, KENYA.**

**BY:**

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**A THESIS SUBMITTED IN PARTIAL FULFILMENT FOR THE DEGREE  
OF MASTER OF ARTS OF KENYATTA UNIVERSITY.**

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## DECLARATION

This thesis is my original work and has not been presented for a degree in any other university or any other award.

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We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

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## DEDICATION

This thesis is dedicated to my parents John N. Wathikwa and Peninnah N. Nzioka and to my brother Charles for their love and unfailing support.

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## ABSTRACT

This study was carried out to examine the nature of health problems experienced by women working in industrial occupations and to identify factors that contribute to those health conditions. The basic theoretical perspective was that different industrial firms and prevailing management practices influence work conditions and environment leading to various health conditions.

The study was based on the observation that women are increasingly seeking employment in the industrial sector, which is characterized by many cases of health problems. Indeed, over the past three years (1996-1999) the number of women engaged in wage employment in the industrial sector in Kenya rose from 12.8% in 1996 to 16.3% in 1997 and to 20.2% in 1998 (Kenya Economic Survey, 1999). While previous studies have reported various health problems in the industrial sector, little attention has been given to the factors that influence the health problems experienced by the women workforce.

The study concentrated mainly on textile, pharmaceutical and food processing industries purposely selected on the basis of their increasing representation on women employment. The aim of the study was to identify health problems that women have experienced while performing their duties and the factors that have influenced experienced health problems. The study was carried out with a sample

of 100 women workers employed in the three selected industries. The data were collected using mainly survey method while supplementary data were obtained from documented cases and direct observation within the selected industries. Data obtained were analyzed using both the quantitative and qualitative methods, which facilitated assessment of the factors that influence the health conditions of women working in the industrial occupations.

The findings of the study showed that working conditions and factors within the work environment largely influence the health conditions of the women employees. It was observed that the age of women employed in the industrial occupations ranged between 23 and 51 years, majority had secondary education, their average salary was Kshs.7,768.50, and 76% of the women workers had dependants. It was also observed that women working in the industrial occupations experience various health problems, which include stress, headache, chestpains backpains, throat infections and injuries. It was further observed that working conditions and environment influence the experienced health problems. In addition, it was observed that policy initiatives and management practices were not adequate for the improvement of health conditions of the women employees. The textile industry was found to be characterized by high incidences of the health problems and strenuous working conditions as compared to pharmaceutical and food processing industries.

The study concluded that the existing industrial policies have not been effectively enforced and particularly in the textile industry. Additional industrial policies and regulations are required in order to alleviate the health problems experienced by women working in the industrial sector. There is need for practical adoption and strict enforcement of policies and management practices that encourage fair working conditions and hazard-free work environments.

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**ABBREVIATIONS USED IN THE STUDY**

WHO	World Health Organization
OHSS	Occupational Health and Services
JUNIC	Joint United Nations Information Committee
LACWHN	Latin American and Caribbean Women's Health Network.
ILO	International Labour Organization
UNECA	United Nations Economic Commission For Africa
UN	United Nations
CBS	Central Bureau of Statistics.
WLR	World Labour Report
DOHSS	Department of Occupational Health and Safety Services

## **DEFINITION OF TERMS AS USED IN THIS STUDY**

### **Health risks**

Refer to the factors contributing to ill health among women workers within the work environment.

### **Ill**

Refers to a condition of a worker being not in full physical or mental health.

### **Illness**

Refers to a state of being ill in body or mind.

### **Ill health**

A condition of inferior health in which some diseases or dysfunction is present but not as serious as illness.

### **Work condition**

Refers to the factors like workload, wages, training, and the nature of work.

### **Work environment**

Refers to the industrial conditions/surroundings within which women work. It includes factors such as sanitary conditions, management of tools, raw materials and products.

### **Working Women**

Refers to women whose labour is hired for salaries or wages.

### **Health**

Refers to the physical, mental, and social well-being of women workers.

**Occupational safety**

Refers to absence of danger connected with industrial occupations.

**Hazard**

A situation or condition, which has a potential to cause an illness or an injury.

**Accident**

Refers to any unforeseen event that happens unexpectedly and causes damage or injury to workers.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 BACKGROUND TO THE PROBLEM**

This study was aimed at identifying health risks that have been experienced by women working in the industrial sector in Kenya during the 1990s. Available data from economic surveys (1980-1999) indicate that the proportion of women in the industrial sector has increased considerably in the last two decades. At the same time there are reports indicating that industrial occupations expose women to a wide range of health hazards (LACWHN, 1997;Karl, 1986).

In the past, women in Kenya and particularly in African communities were confined to domestic employment with less health risks. Economic changes that have occurred during post independence period shifted the roles of women from those of the domestic environment to those related to the urban industrial sector. The economic transformation characterized by monetary exchange and diminishing land productivity has led to participation of women in occupations outside domestic employment, which are accompanied by new forms of health problems. Although the health of working women has received increasing attention over a period of time as the proportion of employed women increases, limited attention has been given to women engaged in occupations considered to entail high risks.

The proportion of working women has continued to increase steadily in both industrialized and less industrialized countries. For instance, from 1996 to 1999, the number of women engaged in wage-employment in the modern sector in Kenya increased from 12.8% in 1996 to 16.3% in 1997 and to 20.2% in 1998 (Kenya Economic Review, 1998). Available reports (ILO, 1987; World Bank, 1997) indicate that most of these women have been concentrated in occupations that are considered to be low risk notably teaching, nursing, secretarial and telephone work and the health risks associated with these occupations include work overload, stress and job insecurity among others.

The industrial sector has witnessed an increasing proportion of women that have engaged in industrial occupations considered to entail high health risks (Green, 1991, Deborah, 1992; ILO, 1987). These occupations include those in the textile, food processing and the pharmaceutical industries and have been reported to be characterized by many difficulties and health problems which range from poor working conditions and poor work environment to ineffective management practices. Available reports indicate that these factors have led gradually to increased cases of health problems (LACWHN, 1997; Sticher, 1990). In a study of women at work, it was reported that participation of women in the industrial sector has exposed them to conditions, which affected their health (Deborah, 1992). Indeed, it has been argued that these health problems have constrained the

performance of women in the industrial occupations due to absenteeism and poor health.

The Kenya Development Plan (1997-2000) considers the industrial occupations to be characterized by health risks that can result in various social and economic consequences. The Development Plan recognizes such occupational health and safety issues and proposes to address them through research and regulations that would minimize health risks in the industrial sector.

In spite of the considerable attention that has been drawn to the occupational health and safety issues, there are still persistent health problems that continue to militate against workers and particularly women workers. Little attention has been given to the nature and extent of the health problems that women experience in these industrial occupations.

Studies that have been carried out in respect to health problems within the industrial occupations have concentrated on the measurement of toxic levels and other sources of industrial pollution (Owate, 1986; Karl, 1986; ILO, 1987 and WHO, 1992). However, these studies have not addressed the impact of such pollution on the workers and particularly women workers. These studies have also emphasized that most industrial firms in developing countries have not maintained conducive work environments. Indeed, these studies have reported that sanitary

conditions in some industries do not meet the required health standards and affect the health of women working in those industries. In addition, these studies pointed out that some working conditions and work environments are more hazardous to some groups; particularly women as compared to men.

More important however is that less attention has been given to those health problems women experience within the industrial occupations (LACWHN, 1997). It has been reported that women workers experience health problems arising from poor working conditions and poor work environment as well as poor management practices.

The concern of the present study was to identify the nature of the health problems that have been experienced by working women in industrial occupations and factors that have led to those health conditions.

### **1.1 STATEMENT OF THE PROBLEM**

Available literature (WHO, 1995; Deborah, 1992; Sticher, 1990, LACHWN, 1997, and Green, 1991) has reported health problems associated with working women in industrial occupations. These studies reported that poor working conditions involving poor wages and unhealthy conditions, and poor work environment including poor sanitary conditions, characterize industrial

occupations in most parts of the world and particularly the developing nations. These studies reported that these working conditions result in health problems such as back complications, chest pains and other occupational illnesses which have direct implications on the health and performance of women employed in the industrial sectors.

Barron and Norris (1976) note that women workers are dominant mainly on the secondary workforce and thus face poor working conditions and environment that is risky to their health. Health problems that are experienced in the industrial occupations, combined with the characteristics of the secondary workforce, can lead to the denial of women equal opportunities in the job market and career development. In addition, health problems that are experienced in the industrial occupations, combined with the characteristics of the secondary workforce, can bring about constraints and/or disruption on realization of the social and biological roles.

The purpose of the study was therefore to identify the characteristics of women in industrial occupations and the nature of health problems that they have experienced and also to identify factors that have precipitated the identified health problems. More specifically, the aim was to identify characteristics of women and the extent to which health conditions such as stress, backpains, chestpains,

infections, premature deliveries and injuries have been experienced by the women employed in industrial occupations.

Secondly, the purpose of this study was also to identify factors that have influenced health problems that have been experienced by women workforce in the industrial occupations. The aspects examined included workload, salary, job insecurity, formal or on-job training in handling production tools and products, effects of long working hours, length of working time, management of heavy and hazardous materials, and unsanitary conditions.

Thirdly, the purpose of this study was to identify intervention policy initiatives and their impact on the reduction of health problems experienced by women in industrial occupations. The intervention measures examined included legislative provisions, policies and arrangement that have been adopted by firms in textile, food processing and pharmaceutical as well as provisions for medical assistance.

The study was designed to be carried out in three industrial sub-sectors, which included the textile, pharmaceutical and food processing firms. The basic hypothesis was that textile firms will be associated with higher incidences of poor work and environment conditions as compared to pharmaceutical and food processing firms.

## **1.2 RESEARCH HYPOTHESES**

The health problems in the industrial occupations have been evaluated/assessed with three stage approaches. Evaluation of relationship between the industries/firms and working conditions; evaluation of the relationship between industries/firms and work environment and the impact of these factors on the health problems that have been experienced by women in the industrial occupations. Working conditions involve factors like workload, wages, training, and nature of work; work environment involve factors like sanitary conditions, management of tools, raw materials, products; policy and management practices. In the hypotheses being examined, the industries/firms constitute independent variables and the health problems constitute dependent variables with working conditions as intervening factors. The hypotheses were examined in the three areas as given below.

### **1.2.1 Working Conditions.**

1. Textile industry will be associated with high incidence of poor working conditions as compared to pharmaceutical industry.
2. Pharmaceutical industry will be associated with high incidence of poor working conditions as compared to food processing industries.
3. Working women will experience more health problems in textile as compared to pharmaceutical and food processing industries due to the working conditions.

### **1.2.2 Work Environment.**

1. Textile industry will be associated with more incidences of poor work environment as compared to Pharmaceutical industry.
2. Pharmaceutical industry will be associated with more incidences of poor work environment as compared to food processing industry.
3. Working women will experience more health problems in textile as compared to pharmaceutical and food processing industries because of the work environment.

### **1.2.3 Policy initiatives and Management practices.**

1. Lack of management adoption of industrial policy initiatives will be associated with greater incidences of poor working conditions.
2. Lack of management adoption of industrial policy initiatives will be associated with greater incidences of poor work environment.

## **1.3 OBJECTIVES OF THE STUDY**

The study focussed on the following objectives:

1. To identify the characteristics of women working in industrial occupations and health problems that they have experienced.
2. To examine factors that influence the health problems that have been experienced by women working in the industrial occupations.

- 3 To test the hypothesis that textile firms will be associated with higher incidences of poor working and environment conditions as compared to pharmaceutical and food processing firms.
- 4 To identify policy initiatives that have been made and their impact on the health problems that have been experienced by women workforce in the industrial occupations.

#### **1.4 SIGNIFICANCE OF THE STUDY**

On the basis of available literature, the problem under study has received limited attention hence the need for the present study. Previous Kenyan studies such as Owate (1986) and Mwanthi (1993) have mainly concentrated on the measurement of toxic levels and other sources of industrial pollution. The study was designed to provide quantitative and qualitative data on the health problems experienced by women workers within the industrial occupations. In addition, the study was designed to contribute towards improving the health conditions of all workers and especially women workers by suggesting ways of improving their working conditions and environment in the industrial sector. To my knowledge no study has so far addressed the health problems experienced by women workers in Kenyan industrial occupations. This study aims to fill this gap and also provide a springboard to further research on this field.

The study was expected to reveal occupational health risks that affect women workers involved in industrial production, particularly the group of women that constitutes a critical and productive cohort. The welfare and economic contribution are important and so their health problems in the industrial sectors needed to be investigated. The study was also expected to contribute to the academic world by adding knowledge to this important research theme.

The findings from this study were also expected to enlighten policy and decision makers on the health problems that women in industrial occupations have experienced as our country prepares to be industrialised by the year 2020. The findings were expected also to guide the Ministry of Labour in re-examining the existing Factory (amendment) Act, 1990, with a view to making improvements and reinforcing the regulations of the health sector, particularly those related to the provision of services on workers health and safety.

### **1.5 SCOPE AND DELIMITATIONS**

This study was primarily a sociological survey and not a clinical study of health risks and conditions. The study relied mostly on the self-reported responses of those who were surveyed. The study sample was obtained from three selected industries, which were textile, pharmaceutical and food processing. The study covered the industrial work environment and so any other health problems

generated from other areas such as those from household roles, were not dealt with.

There is a dearth of literature on the health problems experienced by workers and particularly women workers in Kenya. Thus, studies on occupational health and safety in other developing countries were sought to give insight into the nature and factors associated with health problems in Kenyan industrial occupations.

## **CHAPTER TWO**

### **REVIEW OF RELEVANT LITERATURE**

#### **2.0 INTRODUCTION**

Review of literature was carried out in this section in order to address issues and questions related to work and health, and particularly the conditions of women working in industrial occupations. Review of literature was carried out also to identify previous studies on work and health with special attention on women working in industrial occupations, research methods that were used and reported conclusions.

There is a dearth of literature on the health problems experienced by workers and particularly women workers in Kenya. Thus, the review of literature on this study is mostly based on studies on occupational health and safety in other developing countries to give insight into the nature of and factors associated with health problems in Kenyan industrial occupations.

Relevant literature for this study was reviewed under five subheadings: historical perspective, women in paid employment, work environment and working conditions, work and health and government policy on health and safety.

## **2.1 HISTORICAL PERSPECTIVE**

Issues of work and health gained prominence during the industrial revolution in Europe in the 1700s. The first effects of the industrial revolution were on the conditions of labour and on the life of the working class (Mantoux, 1970). The wages of the first industrial workers were low compared to the heavy work assigned to them. In addition the law apprentices on the spinning mills were very poor. The manufacturers preferred employing women and children to men because the former were considered as docile and easily manipulatable in terms of passiveness and obedience.

Most of the factories and especially the textile firms were characterized by fluff filled air, which gave rise to serious lung diseases. Overcrowding in unventilated rooms favoured the spread of contagious diseases. The first cases of factory fever broke out near Manchester in 1784 (Mantoux, 1970).

In the case of Kenya, issues of work and health gained prominence in the 1970s and the 1980s with the emphasis of industrial development and particularly micro-enterprise development. These issues became even more important with liberalization of the economy and industrial sector during the period 1993-2000 (Sessional paper 1 of 86).

Kenya's industrial history dates back to the 19<sup>th</sup> century when manufacturing arose out of the entrepreneurial activities of the British settlers and other foreigners who started investing in basic industries such as mills, timber and construction. In 1963 Kenya was relatively more industrialized compared to its neighbours, a position that has been maintained to date (Owate, 1986; Coughlin & Ikiara, 1988). Unfortunately, this industrialization has been accompanied by a wide range of occupational health hazards that have caused many accidents at work as well as work related diseases.

Having realized these undesirable results the Kenyan authorities introduced measures aimed at the improvement of the work environment towards a safer state. For instance, by the year 1950, the then colonial government enacted the Factories Ordinance laying down the rules for safety and health within the industries in particular regard to the employment of women and children. The ordinance, which aimed at alleviating the working conditions and the health of persons employed in factories, specified the measures to be taken by the responsible authorities in the control, supervision and application of the relevant safety and health standards in factories. This Ordinance was later renamed Factories Act (1950) and later renamed The Factories (Amendment) Act of 1990. It remains the principal statute dealing with matters incidental and connected with safety, health and welfare of factory workers.

By the mid seventies, Kenya's policy on the improvement of working conditions and work environment and the prevention of occupational accidents and diseases had been developed. The underlying considerations included the pace of change and innovation in manufacturing technology, the mushrooming and massive development projects, the special characteristics of the people and the tropical environment which was posing a major challenge in the provision of occupational safety and health services (Owate, 1986).

In 1975, Kenya entered into an agreement with the government of Finland through a technical cooperation programme aimed at improving working conditions and environment particularly in the industrial sector. This programme included the training of local personnel in the field of occupational safety, health and hygiene, the provision of measurement and analytical equipment and technical experts in this field (Owate, 1986).

The government has since regarded the improvement of safety and health at work as an essential pre-requisite to the harmonious achievement of technological and social progress (Owate, 1986).

## **2.2 OCCUPATIONAL HEALTH AND SAFETY IN KENYA**

Occupational safety and health services in Kenya are influenced by economic, technological, environmental and social factors. In a number of cases, technologies

developed in industrialized countries are transferred into the developing countries where screening laws are inadequate or totally absent to prohibit them (Owate, 1986). This practice complicates attempts to implement the already developed solutions for specific health problems. As a result, practitioners are not only confronted with both technology and the associated hazards about which they have limited knowledge but also a work environment for which fresh solutions must be sought (Owate, 1986).

Accurate and validated information which is often difficult to come by is of cardinal importance when considering the various possibilities for improvement of the environment. In addition, foreign subsidiaries bring in their own ideas and system of safety thus creating different kinds of safety standards in factories next to each other. However where factories are unwilling to cooperate, machinery is imported without safeguards and anti-pollution measures are not undertaken even though the same equipment are fully safeguarded and anti-pollution stipulations complied with in industrialized countries (Owate, 1986).

The problem of unemployment and low wages also tends to result into abuse of human labour in hazardous operations. Such operations should be either mechanized or completely avoided. With respect to local industries, manufacturers have inadequate or no standards to follow while carrying out their work, hence

their work processes do not often meet the acceptable standards with respect to safety and health of workers (Owate, 1986).

Newer health problems in industrial occupations are brought about by changes in the technologies themselves whose pace of change is often not determined locally. The tropical environment may also require special or unique work protection measures and so do the special characteristics of the people. These factors may limit the protection offered by the protective equipment and may not tally with the social habits of workers. Worse still, the scarce resources in the country are often inadequate to finance the implementation of the protective measures.

The Factories Inspectorate Department is charged with the responsibility of enforcing the provision of the Factories Act Chapter 514 of the Laws of Kenya. These laws constitute provisions for the safety, health and welfare of workers. The Inspectorate in conjunction with other government departments has been actively involved in the promotion of protective policies based on the adoption of measures that are congruent with the sociological, cultural and environmental realities without prejudice to technological progress.

The Directorate of Occupational Health and Safety Services primary responsibility is to enforce industrial legislation and regulations. It is also concerned with the health conditions of all categories of workers engaged in industrial occupations.

This is achieved through carrying out regular inspection in all the industries. The inspections are made to promote and reinforce attitudes and behaviour that tend to enhance safety and health in the enterprises. However, even with this significant expansion of the activities, there is still much room for improvement in this area to ensure that employers, workers and trade unions are made more sensitive to the gravity and consequences of the problem of lack of industrial safety.

### **2.3 WOMEN IN PAID EMPLOYMENT**

The public sector forms the largest employer of both men and women in Kenya. However women are found mostly in the lower categories and represented mostly in the domestic female occupations such as teaching, nursing, general administration and clerical services (UNECA, 1996).

Women workers around the world, whether living in highly industrialized or in less industrialized countries share certain working experiences in common (Green 1991; Junic: IV 1985; Hunt 1979). For example, majority of the women workers are found in the lowest paid, less skilled and low status jobs with few opportunities for advancement (Smyke, 1995; Deborah, 1992; Abbot, 1990). It has been observed that women are concentrated in clothing, textile and microelectronic industries where they are exploited and made to operate in poor working conditions (Smyke, 1995). However, they are increasingly entering new occupations such as food processing, textile and the pharmaceuticals.

It has been reported also that women enter paid employment as a result of economic necessity and changes in the nature of work (WHO, 1995; McDowell, 1994; Deborah, 1992). These studies have reported that the growing number of single parents and the failure of the male earner to generate sufficient income to meet basic family needs make women join paid employment. While supporting this observation, LACWHN (1997) noted that women have left the private sphere to perform productive work outside while continuing to fulfil their domestic duties. International Labour Organization (ILO) has indicated that since 1950, female workforce has grown twice as fast as that of the male. According to ILO reports, by the year 1994 nearly 45% of the worlds' women between 16 and 64 years old were economically active. In addition, the Kenya Demographic Health Survey (1998) reported that in Kenya, 39% of women are full-time employees, 10% are seasonal workers while 3% are employed once in a while. It added that urban-based women workers form over 6% of all women workers and support regular full-time employment. CEPAL (1997) cited by LACWHN (1997) pointed out that by the end of the year 2000 there would be 65 million women in the labour force, a higher figure than the 10 million that made up the economically active female population in 1950.

A number of studies on factory women workers (Coyle 1984; West Wood 1984; Cavendish 1982) cited by Abbot (1990) show that women work in jobs classified as unskilled and earn substantially less than men. In addition, LACWHN (1997)

observes that the nature of women's work is less skilled, little valued and less paid. The UN (1991) supports this observation by noting that on average women workers around the world earn 30% to 40% less than men and, particularly in Kenya, they earn 75% of men's income. Women workers in Kenya experience these working conditions and face similar hazardous industrial environments within their areas of work. Table 2.1 shows wage employment and gender by industry in Kenya between 1996 - 1998.

Table 2.1. Wage employment and sex by industry in Kenya between 1996 and 1998 ( Number of workers in thousands { '000s}).

INDUSTRY	MALES			FEMALES			TOTALS		
	1996	1997	1998	1996	1997	1998	1996	1997	1998
Agriculture and Forestry	226.4	230	232.3	76.6	75.5	76.5	303	305.6	308.8
Manufacturing	176.7	180	180.3	33.8	35	36	210.5	214.5	216.9
Education Services	166.4	176	177.9	111	117	124	277	292.9	301.4
Community, Personal services of Public Administration.	108.1	105	102.4	64.7	63.6	64.1	172.8	168.6	166.5
Trade, Restaurants and Hotels	106.8	109	109.4	36.4	39.4	41.3	1443	148.2	150.7
Building and Construction	72.5	74.7	74.2	6.3	5.2	5	78.8	79.9	79.2
Transport and Communication	64.6	68.4	67.6	15.7	17.4	17.4	80.3	85.8	85
Finance, Insurance, Real Estates and Business	60.3	61.9	62.1	20.7	21.3	21.9	81	83.2	84
Domestic Services	56.4	59.4	58.6	38.9	39.4	40.4	95.3	98.8	99
Electricity and Water	19.3	19.3	19.2	4	4.1	4	23.3	23.4	23.2
Mining and Quarrying	3.9	3.7	3.9	1.3	1.3	1.1	5.2	5	5
Other Services	84.4	87.8	89.3	50.3	53.7	55.9	135.7	111.5	145.2
<b>Total</b>	<b>11475</b>	<b>1174</b>	<b>1177.8</b>	<b>459</b>	<b>473</b>	<b>487</b>	<b>1607</b>	<b>1647</b>	<b>1665</b>
Of Which: Regular	961.8	961	980.4	373	382	394	1334	1347	13743
Casual	185.7	210	197.4	86.8	91.1	93.2	272.5	300.8	290.6

**Source:** Central Bureau of Statistics, 1997; 1998; 1999. Pp. 59, 47 and 49. Table

Table 2.1 shows that the majority of women workers in the modern sector, work in the community, social and personnel service (42.8% in 1998), agricultural sector and also in the education services which is the main employer of female workers. Employment in the traditionally male- dominated industries remains low.

#### **2.4 THE WORKING CONDITIONS AND WORK ENVIRONMENT**

In most industrial occupations, work takes place in an environment with persistent problems related to comfort, health and safety (Kibwana, 1997; Smyke, 1995; Green, 1991; Karpilow, 1991). Indeed, WHO (1995) estimates that about 120 million occupational accidents with 200,000 fatalities occur annually and some 68 to 157 million new cases of occupational disease may be caused by various exposures at work. Women workers form a portion of these industrial workers and are likely to be exposed to these health risks within the work environment which may have adverse consequences on their health (Smyke, 1995; McDowell, 1994). Women workers spend a third of their adult lives working where the economic and material values of the society are generated and this exposes them to dangerous health risks with adverse consequences on their health (WHO, 1995).

The modern women's working lives are associated with increasing demands for learning new skills, adapting to new types of work, pressure of high productivity, hectic jobs with high growing psychological workload and stress (WHO, 1995;

McDowell, 1994). These generate exhaustive work and intense mental activity that may affect their health. LACWHN (1997) and Green (1991) affirm that working women undertake jobs, which require them to exert small forces repeatedly, and this has a cumulative great force. This exposes them to postural constraints that impose rapid postural changes on their bodies.

Some scholars have argued that regulations evolved in the work environment are skewed towards a male-patterned lifestyle (Green, 1991). More specifically, the need to meet family responsibilities has been left out in the labour standards such that women workers are left to arrange for childcare (in order to work) and thus bear this burden on their own. The World Labour report (1987) observes that poor working conditions aggravate women workers health at work. The reported observed that work is characterised by long working hours and poor sanitation. These situations make women workers more vulnerable to bad work environment, which eventually reduce their alertness to occupational hazards. In addition, they become ignorant of the hazards within their workplaces and also the means to protect themselves from such hazards. This is as a result of illiteracy and insufficient familiarity with industrial work.

The amount of time working women spend on their jobs and how the time is organized can significantly affect their health. Length of working hours and the provision of resting opportunities are essential for health, safety and well-being of

workers. ILO has the 40-hour week convention of 1935 (No.47), which contrasts with the 48 hours per week practiced in many developing countries including Kenya. Moreover, legal provisions on the working time has a limited impact in developing countries such as Kenya. This is due to a number of reasons. First, few sectors of the economy are covered by this legislation. Second, there are economic pressures to work for long hours with or without overtime. Finally, there is weak enforcement of legal provisions and workers have difficulty in seeking and obtaining legal redress. However, general reduction of normal hours is a less urgent problem as compared to the need for effective measures to ensure at least a basic level of protection to a greater number of women workers.

Women workers have largely been excluded from the trade union activities even in those jobs they have a high representation. Majority of them are constrained by household responsibilities and therefore unable to express their views on the unfavourable work conditions. As a result, issues pertinent to the well being of the women workers within the work environment go unnoticed.

The modern work environment is a growing health risk among women workers. It includes factors like sanitary conditions and the physical management of the work place. For example, some industries do not aim at improving sanitary conditions, which are risky to their women workers' health.

## **2.5 WORK AND HEALTH**

Good health is an important aspect of well being (WHO, 1995). More specifically, Karpilow (1991: 48) reflects on this by noting that "...a sick employee will hardly be as productive as one who is free from disease". Women workers who form a part of the productive workforce need a healthy working environment for a high work performance. World Bank (1993) observes that improved health conditions contribute to improved work performance. Such a situation reduces the production losses due to illness and also frees resources that would be spent on treating illness for alternative use. This brings in gains of worker productivity, as few days are lost due to illness.

With a healthy women labour force, medical costs are reduced and therefore more investment is put in staff training (World Bank, 1993). A healthy work environment is thus valuable to women workers and contributes positively to their health, quality of products, work motivation and job satisfaction.

## **2.6 GOVERNMENT POLICY ON HEALTH AND SAFETY**

The policy of the Kenya government in relation to the health of all Kenyans is stipulated in the Kenya Health Framework, 1994. Occupational Health and Safety in Kenya is governed by the Factories and Other places of Work Act (Cap 514) and enforced by the Directorate of the Occupational Health and Safety. The Act

addresses a variety of work place hazards such as hygiene, welfare, fire, machine, steamboilers and hoists, first aid and occupational diseases among others. The Factories (Amendment) Act of 1990 expands the principal Act and imposes heavier penalties. It includes workplaces previously not within the original and narrow definition of a factory and provides for the establishment of safety and health committees and appointment of safety representatives.

Women workers are covered under this Act whose main objective is to promote health and safety for all workers in the industrial sector. However, this goal is yet to be realized. For instance, Mugambi (1999) observes that management of various industries are not committed to implementing the Act because the majority of women employed at low status lack medical cover. The unsafe and unhealthy work environments also have adverse effects on the health of women workers which eventually results into higher medical and insurance costs for the industry.

Abbot (1990) and Karpilow (1991) argue that women workers do not enjoy the same protection as men with regard to the protective legislation. They pointed out that there is no legal framework encouraging women workers to report their health conditions or to keep them free from health risks within the industrial sector. Instead women, according to these scholars work in fear of being dismissed when found out to be sick. A legal framework would benefit the industry by keeping

women workers on suitable jobs and thereby retaining the most experienced ones (Smyke, 1995; Hunt, 1979).

There has been a debate on special protective measures for women workers and how the measures can be reconciled with equity of opportunity and treatment. In a review of company policies barring women of 'childbearing potential' from exposure to health risks, Smyke (1995) reported that women lost jobs instead of the company restoring devices that would eliminate the problem. This practice generally diverts energy and resources from the health problems and therefore points to a need for a comprehensive policy to protect women workers' health within the industrial occupations.

## **2.7 THEORETICAL FRAMEWORK**

The term 'Health' has different meanings to different people. The World Health Organisation (WHO, 1995) defines health as physical, mental and social well-being and not merely the absence of disease or infirmity. Good health is both a prerequisite and a basic right for a rapid socio-economic development and a healthy working population (Kibwana, 1997, Kenya Development Plan, 1997).

This study is guided by two theories, the human factors epidemiological approach and the dual labour market approach. The Human factors epidemiological

approach advanced by Amick (1984) describes the complexity of the worker-environment interaction allowing specific relationship to be established between the structural work environment, work behaviour and health. The approach integrates human factors such as the environment within which people live and work and the epidemiological method, that is, the investigation of the influences and patterns of health and illness in human populations. This theory seeks to relate social, physical and psychological factors in the environment (Amick, 1984).

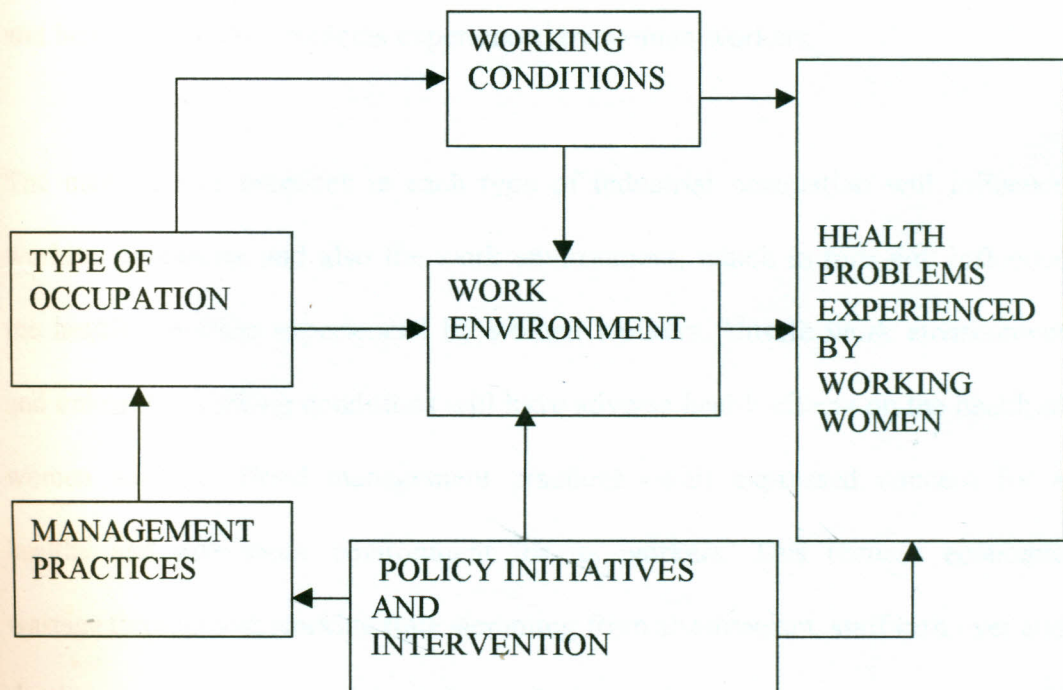
With respect to the current study, women workers experience health problems within the industrial work environment due to exposure to health risks. These health risks include unsanitary conditions, lack of protective clothing, work overload, job insecurity, low wages, lack of on-job training and absence of a clear occupational health and safety policy. These health risks put limits on the capabilities of women as industrial workers and thus affect their health and well-being.

This study also adopts the dual labour market perspective developed by Barron and Norris (1976). It distinguishes between two labour markets, the primary (made up of jobs offering training and promotion) and the secondary (comprising insecure and lowly paid unskilled jobs). Workers in the secondary sectors are

easily dispensed with, for example, during recession, they are poorly paid and have poor conditions of employment (Abbot and Wallace, 1990).

Barron and Norris (1976) argue that women workers belong mainly to the secondary workforce and thus face poor working conditions and environment that is risky to their health. The theory asserts that uncondusive work environment exposes women to health risks which often results into ill health. The above perspectives will guide this study and have been used to formulate a conceptual model as shown in figure 1.

Figure 1. A Conceptual Model on the Health problems experienced by women workers.



Source: Synthesized from reviewed literature (Green, 1991; Abbot, 1990).

The conceptual model shows that there are relationships between factors within the industrial work environment and working conditions and health and well-being of industrial women workers.

Each type of occupation whether textile, food processing or pharmaceutical will have different working conditions and thus different work environments. This will influence the nature of health problems experienced in each industrial occupation. Working conditions prevalent in each type of occupation influence the work environment of different industrial occupations. In addition, the policy initiatives and intervention measures adopted by the industries will influence the work environment. Adoption of industrial policy initiatives by the management will influence the incidences of poor work environment and poor working conditions and hence the health problems experienced by women workers.

The management practices in each type of industrial occupation will influence working conditions and also the work environment, which in turn will influence the health problems experienced by women workers. Unsafe work environment and unhealthy working conditions will have adverse health effects on the health of women workers. Good management practices entail expressed concern for a healthy and safe work environment for its workers. This reduces economic wastage through lost working time stemming from absenteeism, staff turn over and death.

The influence of these factors vary with each type of industry. Women working in industries characterized by poor working conditions and environment will experience more health problems. Moreover, industries with poor management practices and poor intervention and policy initiatives will expose their workers to health risks leading to high incidences of the health problems being experienced.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 STUDY AREA**

This study was conducted in Nairobi, Kenya and specifically with industries within the industrial area which is predominantly a busy industrial environment. Nairobi area was selected because of the diversity of industries and the largest number of women working in various industrial environments. Nairobi harbours a diversity of people (2.1 million of whom 987,000 are women as per the 1999 National Population and Housing census) from different parts of the country. This heterogeneous population enhances representativeness and reduces the bias, which may arise from the basic differences in women workers' backgrounds.

#### **3.2 SELECTED INDUSTRIES**

In order to examine the aspects stated earlier, three industries were purposively selected because of the increasing representation of women in their workforce and their importance in terms of the working conditions and the work environment. These selected industries are textile, pharmaceutical, and food processing in which available literature (World Bank, 1996; Green, 1991; WHO, 1995) indicates that textile industry has been associated with poor working conditions and work environment as compared to pharmaceutical and food processing.

In order to obtain a manageable sample two industrial firms in each of the three categories were purposively selected. In light of the forgoing assumption, the following industries listed in Table 3.1 were selected.

Table 3.1. Selected industries.

<b>TYPE OF INDUSTRY</b>	<b>NO. OF WOMEN</b>	<b>NO. OF MEN.</b>	<b>TOTAL.</b>
1. Food Processing			
(a) House of Manji	80	70	150
(b) P.J. Products.	26	40	66
2. Pharmaceutical			
(a) SmithKline Beacham	40	90	130
(b) Beta Chemicals ltd.	20	50	70
3. Textile			
(a) Sunflag textiles	84	90	174
(b) East African Fine Spinners.	32	45	77
	—	—	—
<b>Total</b>	<b>282</b>	<b>385</b>	<b>667</b>

The investigator obtained clearance, directions and locations of the industries from the Department of Occupational Health and Safety Services (DOHSS), Ministry of Labour. He then proceeded to visit the industries during the working hours. An introduction letter from DOHSS gave the investigator access into the industries and also helped him create a quick rapport with the respondents. The investigator

took time to explain the purpose of his study to the respondents before issuing the questionnaires. In the case of illiterate women workers the investigator took time to interview each at a time.

For secondary data, the researcher visited the DOHSS offices, specific labour union offices (clothing & textile unions) and libraries occasionally in order to obtain first hand information from their reports and other materials that provided more information for the study.

### **3.3 POPULATION AND SAMPLE SIZE**

The population targeted for this study were women working in the industrial occupations. In particular the study targeted those industrial occupations where women had an increasing representation. This selection was necessary because the study focussed on the health problems experienced by women working in the industrial occupations considered to entail high risks.

The textile, pharmaceutical and food processing industries were selected in order to provide a sampling frame. The sample units varied with the total number of women working in each selected industry. For firms with less than fifty women workers, 50% of the women formed the sample size while those with over fifty women workers 25% formed the sample. These percentages were used to obtain a

manageable and a representative sample size given the limited time and financial constraints. From a total population of 282 working women, a representative sample of 100 women workers was obtained (Table 3.2).

Table 3.2 Sample size.

<b>FIRM</b>	<b>NO. OF WOMEN</b>	<b>SAMPLE SIZE.</b>	<b>% OF TOTAL WOMEN.</b>
(i)P.J Products.	26	13	50
(ii)Smithkline Beacham.	40	20	50
(iii)Beta Healthcare ltd.	20	10	50
(iv)E.A.F.Spinners	32	16	50
(v)House of Manji	80	20	25
(vi)Sunflug textiles.	84	21	25
<b>Total</b>	<b>282</b>	<b>100</b>	<b>100</b>

### 3.4 SAMPLING PROCEDURE

There are two most common sampling procedures. One is the probabilistic sampling where each unit has an equal chance of selection and non-probabilistic sampling where some units have a higher chance of selection than others. According to Nachmias (1992) and Peil (1992) probability sampling affect representativeness.

This study adopted the probabilistic sampling procedure. Registration lists of all workers were sought from the human resource office in each industry. The workers were subsequently classified according to sex in order to design a sampling frame in which a total list of 282 women employees was compiled. In each industry simple random sampling was used to select the sample units which totaled 100. Consequently, the sample selected from each industry is shown in Table 3.2.

### **3.5 RESEARCH DESIGN**

The research design used was mainly survey. Both secondary and primary data were collected. Secondary data was obtained from published and unpublished sources. Primary data was collected from the sampled respondents within the selected industries. The collection of data was carried out by the investigator with the help of a research assistant who underwent proper training before the actual fieldwork. The collection of primary data relied on three research instruments namely questionnaires, structured interviews and review of documented cases.

#### **3.5.1 Questionnaires**

The questionnaire was used as the main instrument for collecting data because of the nature of the work done by the targeted group. The questionnaire was administered to the sampled 100 respondents in the selected industries. This method brought out the nature of health problems experienced by individual

women workers and their opinions on the factors that influence these experienced health problems. It also provided the views of the respondents on the management practices and policy initiatives the industrial firms had put in place to address these problems.

A modified version of Likert scale was used to operationalize experiences and views of the women in the identified sample. This scale was considered to be appropriate as it allowed the respondents to present their experiences and views on a wider range of ordered scale. In addition, likert scale as operationalized in the questionnaires (Appendix 1) allowed for use of the relatively powerful statistical techniques namely analysis of variance (ANOVA) and Correlation (Eta) in the analysis.

Before the actual survey, a pretest survey was carried out to determine clarity of questions and to eliminate questions that were sensitive as well as those whose answers appeared ambiguous. The pretest gave a general improvement in the whole exercise and enhanced reliability and validity of collected data. The investigator purposely selected 15 cases in 3 industries not included in the actual sample for the purpose of the pretest. For details of the questionnaire see appendix 1.

### **3.5.2 Documented cases.**

The investigator requested for documented cases on reported health problems from the selected industries. These included the reported illnesses, injuries and accidents by the women workers. Documents on reported health cases in the Ministry of Labour from the industries were also obtained and examined. These documents provided a supplementary information to the responses given by the respondents and provided additional information on the main health problems reported by the women workers in the various industrial occupations.

### **3.5.3 Structured Interview**

The structured interview method was used to capture some health problems, which the questionnaire method may have missed out. It was administered on special cases and especially on the illiterate and previously sick women workers. This method provided a forum for in-depth interview, which helped to obtain more information on the nature and factors associated with health problems experienced by working women in Kenyan industrial occupations. The instrument was administered to twelve women workers purposely chosen from all the selected industries. These women were part of the original sample. The schedule used was a replica of the questionnaire though with much probing.

In addition to the above instruments, the investigator obtained additional information through direct observation within the selected industries. A great deal of relevant quantitative and qualitative data was obtained.

### **3.6 METHOD OF DATA ANALYSIS**

In order to highlight the nature and extent of health problems in the selected industries and related working conditions and environment, both qualitative and quantitative analysis of data were carried out.

In the qualitative analysis, selected critical health problems and related factors obtained from observations, documentation, and interviews were presented. First the raw data were coded and classified into categories for counting. Standardization measures were used to summarize data. For instance, totals, frequencies and percentages were calculated. Standardization permitted comparison between categories or between samples from different companies regardless of fluctuations in the actual number of cases.

In the quantitative analysis survey data was presented in order to identify overall trends and statistical associations that could be generalized. Such quantitative analysis involved the use of the frequency distribution and assessment of the relationship between variables using measures of associations, particularly correlation ratio (Eta). This statistical procedure was used because the industries

and/or firms were essentially categories (nominal) variables and the dependent variables were basically likert and/or interval variables. In addition, Eta was used because it applies analysis of variance (ANOVA) in the testing of significance and provide the strength of the observed association between variables.

While Social sciences have used 0.05 probability level of error as a standard level of significance, the present study adopted 0.01 to affirm hypotheses under investigation; that is, that the hypotheses are supported by the sample data. The smaller the  $\alpha$ , the greater the confidence in the observed results. An Alpha level of  $\alpha \leq 0.01$  allows for confidence in the results with a possibility of 1% error or less (Mueller, 1977).

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

#### **4.0 INTRODUCTION**

This chapter presents analysis of data obtained from the field and other secondary sources of information. The first part presents the characteristics of the respondents, which include age, marital status, level of education, dependants, income, training, responsibility and job satisfaction. It also provides a description of the health problems experienced by working women, working conditions and the work environment and the management practices and policy initiatives that have been made and their impact on the health problems experienced.

The second part presents the factors that influence the health conditions of women workers in the industrial occupations.

#### **4.1 CHARACTERISTICS OF THE SAMPLE**

##### **4.1.1 Sample of respondents**

The sample for the study was drawn from a list of women workers in each of the selected industrial firms through which a total of 100 women workers were drawn from a population of 282 women workers using proportional representation as indicated in Table 4.1.

Table 4.1 Samples of women workers from the selected industries.

**N=100**

<b>INDUSTRY</b>	<b>PERCENT</b>
Textile	37
Pharmaceutical	30
Food processing	33
<b>TOTAL</b>	<b>100</b>

As indicated in Table 4.1, the percentage representation of each industry shows that the textile industry with 37% had the highest number of employed women followed by food processing with 33% and finally the pharmaceuticals with 30%. From the three categories of industries, two industrial firms were purposively selected from each industry. Sunflug, a textile firm had the highest number of employed women and comprised of 21% of the total sample. Beta Health Care had the lowest number of women workers amounting to 10% of the sample (Table 4.2).

Table 4.2 Samples of women workers from selected Firms

**N=100**

<b>FIRM</b>	<b>PERCENT</b>
Sunflug	21
P.J. Products	13
SmithKline Beachan	20
Fine Spinners Limited	16
House of Manji	20
Beta Care Chemicals	10
<b>Total</b>	<b>100</b>

#### 4.1.2 Age of the Respondents

The age of the respondents ranged between 23 and 51 years and the average was 30 years and the standard deviation was 5 years. This is a typical age of a workforce and also the most productive age for the women (Table 1, appendix)

#### 4.1.3 Level of Education

Education of women in the selected industrial occupations was examined and the data are presented in Table 4.3.

Table 4.3 Level of Education of respondents

**N=100**

<b>LEVEL</b>	<b>PERCENT</b>
Post Secondary	13.0
Secondary	74.0
Primary	13.0
Never went to school	0.0
<b>Total</b>	<b>100.0</b>

It can be observed that 74% of the women in the selected occupations had received secondary school education while 13% had post secondary education and 13% had primary education. It was important to note that all the interviewed women workers had received some formal education.

#### **4.1.4 Marital status**

Marital status was considered in the study because of the need for seeking industrial employment to meet economic requirements. Entry to marriage brings with it certain responsibilities and expectations for and on women in any society.

In the present sample of women from selected industrial occupations 55% were married, 34% were single, 8% were divorced and 3% were widowed (Table 2, appendix). These data are consistent with those of ILO (1987) who reported that married women seek employment more than the single women.

#### **4.1.5 Salary distribution of respondents**

Income of the women in the selected industries was considered and observed that wages ranged from Kshs. 4,320 to Kshs.15,820 with the average being Kshs.7,768.50. It was also observed that 43% of the women workers earned not more than Kshs.5,570 per month (Table 3, appendix). These data are consistent with those of Green (1991) and Junic: IV who reported that majority of women workers are paid low salaries. The issue here is that the lower the salary the higher the cases of stress and job dissatisfaction.

#### **4.1.6 Dependants**

Information on dependants was examined because of its potential to influence the cost of living in a family. Number of children was used as an indicator and the results

showed that 26% of the employed women had no children/dependants, 22% had two children each, 18% had three children each, 16% had one child each, 15% had four children each and only 1% had one child each. The issue here is that the larger the number of dependants the more likely for dissatisfaction and stress to arise. (Table 4, appendix).

#### 4.1.7 Duty /Responsibilities

The working women in the various industrial occupations were engaged in different tasks and responsibilities as indicated in Table 4.4.

Table 4.4 Duties of the employed women

**N=100**

<b>DUTY</b>	<b>PERCENT</b>
Supervisor	13.0
Machinist	24.0
Packing	42.0
Checkers	9.0
Quality Control	7.0
Technician	3.0
Others	2.0
<b>Total</b>	<b>100.0</b>

As reflected in Table 4.4, the sampled women from the selected industries were engaged in six main types of responsibilities whereby 42% were engaged in packing, 24% in machinery (mainly tailoring), and only 3% in technical positions. It was observed that 77% of the working women are in the secondary workforce and perform duties which include packing, checking and machinery (tailoring). The remaining 23% are in the primary workforce and perform duties which include supervision, technicians and quality control. These data are consistent with those of Abbot and Wallace (1990) and ILO (1995) who reported that the majority of women workers are employed in unskilled and low status jobs.

#### **4.1.8 Work Satisfaction**

Information were obtained on work satisfaction of women employees in their daily responsibilities and the responses are summarized in Table 4.5

Table 4.5 Satisfaction rate of the employed women

**N=100**

<b>LEVEL OF SATISFACTION</b>	<b>PERCENT</b>
Not satisfied	36.0
Fairly satisfied	64.0
Very satisfied	0.0
<b>Total</b>	<b>100.0</b>

Findings in Table 4.5 indicate that 64% of the interviewed women in the selected industrial occupations reported lack of satisfaction with their work while the remaining 36% reported as not satisfied with their daily duties. These data are consistent with those of Green (1991) who reported that work satisfaction depends on the nature of work one is engaged in. In addition, the jobs women were employed to perform represented the best jobs they could be offered.

#### 4.2. HEALTH PROBLEMS EXPERIENCED

One of the objectives of this study was to identify the nature of health problems that have been experienced by women working in industrial occupations. The findings show that most of the women employees reported various aspects related to their duties they did not find to be satisfactory as summarized in Table 4.6.

Table 4.6 Aspects reported to be unsatisfactory

**N=100**

<b>ASPECT</b>	<b>PERCENT</b>
Heavy workload	100.0
Poor salary	98.0
Long working hours	96.0
Poor ventilation	95.0
Job insecurity	82.0

According to the data in Table 4.6, all the women employees (100%) from the selected industrial occupations have experienced heavy workload, 98% have experienced poor salary, 96% complained of working for long hours, 95% reported poor ventilation and 82% complained of job insecurity. These data are consistent with WHO (1995) and LACWHN (1997) who reported that women working in the industrial occupations are overworked, paid meager salaries and even face dismissal from their jobs without notice.

Some health problems were reported to have been experienced by the working women within the sampled industrial occupations. Table 4.7 shows the frequency of the nine main reported health problems.

Table 4.7 Frequency of health problems experienced

**N=100**

<b>ASPECT</b>	<b>NEVER</b>	<b>RARELY</b>	<b>SOMETIMES</b>	<b>ALWAYS</b>
Stress	0	0	0	100
Head ache	0	12	27	61
Chest pain	0	0	8	92
Back pain	0	0	4	96
Throat infection	0	5	14	81
Accidents	0	12	50	38
Miscarriage	15	39	33	13
Tuberculosis	15	20	35	30
Asthma	10	20	40	30

Table 4.8 indicates that all the women employees (100%) have always experienced stress, 96% have always experienced back pain, 92% have always experienced chest

pain, 81% have always experienced throat infection and 61% have always experienced headache. Fifty percent (50%) of the women workers have sometimes experienced accidents, 35% have sometimes experienced tuberculosis and 40% have sometimes experienced asthma. Thirty nine percent (39%) of the women have rarely experienced miscarriage. These findings further show that stress, back pain and chest pain were the health problems experienced always by the majority of women workers whereas miscarriage was the least experienced. (Tables 5, 6,7 and 8, appendix).

In addition, the respondents reported some undesirable conditions they have experienced in their work which included repetitiveness, stressfulness and demanding work. Findings from the data collected indicated that all women (100%) reported their work as always repetitive, stressful and demanding.

#### **4.3 WORKING CONDITIONS AND WORK ENVIRONMENT**

Data were collected on the working conditions and work environment within the industrial occupations where the sampled women worked. Various work situations were reported by the women employees as leading to health problems and presented in Table 4.8.

Table 4.8 Frequency of some work factors

N=100

ASPECT	NEVER	MONTHLY	QUARTERLY	ANNUALL Y
Workload	7	20	30	43
Poor wage	7	14	21	48
Long working hrs	7	19	24	50
Discrimination	69	21	9	1
Long standing	30	30	20	20

It can be observed that the percentage rate of women employees who experienced heavy work, poor wage and long working hours annually was 43%, 48% and 50% respectively. In addition, 30% of the women employees experienced long standing hours monthly while 69% reported as having never experienced discrimination. These data are consistent with LACWHN (1997) who observed that women employees experience heavy workload, poor wages and long working hours. (Tables 10 and 11, appendix). Table 4.9 indicates the rating of maintenance of some industrial work environment aspects.

Table 4.9 Maintenance of company work environment

**N=100**

<b>ASPECT</b>	<b>NOT MAINTAINED</b>	<b>INADEQUATELY MAINTAINED</b>	<b>ADEQUATELY MAINTAINED</b>
Lighting systems	3	22	75
Emergency escapes	64	36	0
Wash rooms	18	74	8
Drainage systems	13	75	12
Fire appliances	25	65	10
Waste disposal	2	94	4
Heat/cooling systems	98	2	0
Noise regulating systems	90	10	0

Table 4.9 indicates that the rating of maintenance of the reported work environment factors varied. Seventy-five percent (75%) of the women interviewed reported lighting systems as adequately maintained. Waste disposal, washrooms, drainage systems and fire appliances were reported as inadequately maintained by 94%, 74%, 75% and 65% respectively. Emergency escapes noise regulating systems and heat / cooling systems were reported as not maintained by 64%, 90% and 98% respectively. This data is consistent with Smyke (1995) who noted that work usually takes place in an environment with persistent problems of comfort, health and safety.

#### 4.4 POLICY INITIATIVES AND MANAGEMENT PRACTICES

Data was obtained on the management practices within the selected industrial occupations and results are summarized in Table 4.10.

Table 4.10 company assistance given to workers.

**N=100**

ASSISTANCE	NEVER	RARELY	SOMETIMES	ALWAYS
Technical advise	66	34	0	0
Practical training	100	0	0	0
Medical assistance	49	25	13	13
Advice on personal safety	37	63	0	0

As reflected in Table 4.10, only 13% of the sampled employees reported having benefited from medical assistance while 49% reported having been given no medical assistance. Sixty three percent (63%) of the women employees reported having rarely received advice on personal safety while 66% had never received any technical advise on how to perform their duties.

With regard to the provision of protective wear by the industries, overalls and coat dusts were reported as being adequately provided by 63% and 13% respectively. Of all the sampled women workers, 100% reported as having never been provided with

gloves, earmuffs and boots, 73% had never been provided with coat dusts whereas 50% had no provision of breathing muffs. (Table13, appendix)

#### **4.5 FACTORS INFLUENCING THE HEALTH CONDITIONS OF WOMEN WORKERS IN THE INDUSTRIAL OCCUPATIONS**

The purpose of this section is to examine factors that influence the health condition of the employed women in the selected industrial occupations. It will be recalled that the hypotheses to be examined involved ways in which the type of industry and the working conditions determine health problems that are experienced by women working in industrial occupations.

In order to examine these hypotheses, correlation ratio ( $\eta^2$ ), as a measure of association, was used to assess the influence of the industry and working conditions on the health problems reported by women working in industrial occupations. The coefficients of this statistic are usually squared in order to achieve interpretation of explained variation in terms of percentages. In addition, F test was used to evaluate the level of significance on the observed coefficient of the correlation ratio. In this respect the results with  $F < .01$  were considered to be significant and could not therefore be attributed to chance.

## 4.5.1 EMPLOYEE CHARACTERISTICS

### 4.5.1.1 Education level of women workers

With the data obtained on the education of the women working in the industrial occupations, the level of education was correlated with the three selected industries and the results are presented in Table 4.11.

Table 4.11 Education level by Industry

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	2.7
Pharmaceutical	30	3.4
Food processing	33	3.0

D.F=2, F =17.1, P < .00001, Eta<sup>2</sup>=0.26

It was observed that the type of industry influences education level of the women employed. The correlation ratio (eta<sup>2</sup>) statistic indicates a 26% influence by the industry on the education level of its women employees with the probability level of error less than 0.00001.

Indeed, the data indicate that Fine Spinners employ the least educated women as compared to SmithKline Beacham that employs relatively educated women. The data also indicate that textile, which include Fine Spinners and Sunflug employ the least educated women. This is because these women are dominant mainly on the

secondary workforce which is comprised of insecure, lowly paid and unskilled jobs.

The data indicate further that education has an influence on the satisfaction of the women in the selected industrial occupations. The correlation ratio ( $\text{Eta}^2$ ) indicates a 12% influence by education on the satisfaction of women workers with probability of error less than 0.0004. (Table 15, appendix)

#### 4.5.1.2 Income

With the data obtained on the income of the women employed in the selected industrial occupations, the analysis in Table 4.12 indicates that the type of industry determines the wage paid to the women employees.

Table 4.12 Income by industry

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN (KSHS)</b>
Textile	37	5,200.70
Pharmaceutical	30	9,228.00
Food processing	33	9,319.70

D.F=2, F=24.8, P<.00001,  $\text{Eta}^2= 0.34$

According to these data, the correlation ratio ( $\text{Eta}^2$ ) indicates a 34% influence of the industry on the income level of its women employees with less than 0.00001

probability level of error. Indeed it will be noted that textile industry pays the lowest average salary of Kshs.5,200.70 as compared to food processing industry which pays an average salary of Kshs.9,319.70

This is further reflected by the firms in which textile's Fine Spinners pays its workers the least average wage of Kshs.4,650.00 per month as compared to P.J Products of food processing industry which pays the highest average salary of Kshs.10,222.50 to its women workers. This information is summarized in Table 4.13.

Table 4.13 Wage per month by Firm

<b>FIRM</b>	<b>FREQUENCY</b>	<b>MEAN (KSHS)</b>
Sunflug	21	5,620.00
Fine Spinners	16	4,650.00
Beta Chemicals	10	8,149.00
SmithKline Beacham.	20	9,767.50
House of Manji	20	7,930.00
P.J Products	13	10,222.50

D.f=5, F =12.4, P < .00001, Eta<sup>2</sup> =0.40

With respect to data presented in Table 4.13, the firm determines 40% of the variation in the salary paid to the women workers with less than 0.00001 probability

level of error. The data shows that textile industry paid less to its workers as compared to the pharmaceuticals and food processing industries. Women working in low status and manual jobs such as checking and packing were mainly found in the textile industry and earned less than the supervisors and technicians employed in the other two industries who had the highest wages. (Table 16, appendix).

Findings from the study also indicated that formal training influenced the salary paid to the women employees. Indeed the data indicate that 69% of these women employees had formal training and earned an average salary of Kshs.6,313.50 while the 31% trained women workers earned an average salary of Kshs.11,005.80. The correlation statistic ( $\text{Eta}^2$ ) indicated a 41% influence by formal training on salary payment to the women workers with less than 0.00001 probability level of error. (Table 17, appendix.)

It will be recalled that work satisfaction can be attributed to wages paid and also to the working conditions. In this respect the association between work satisfaction and wages paid was examined and the results are summarized in Table 4.14.

Table 4.14. Wage by Satisfaction

<b>LEVEL OF SATISFACTION</b>	<b>CASES</b>	<b>MEAN</b>
Not satisfied	36	5,742.90
Fairly satisfied	64	8,907.30
Very satisfied	-	-

D.f=1, F=24.75, P<.00001, Eta<sup>2</sup>= 0.20

According to data presented in Table 4.14, wages paid to women employees contribute 20% of variation on work satisfaction with probability level of error less than .00001. It can be concluded therefore that salaries make an important contribution to work satisfaction and related variables such as stress.

#### **4.5.1.3 Years of work**

It will be recalled that one of our concerns was the way in which the type of industry influenced the years of service through the nature of employment and working conditions. Information obtained on the number of years in service was correlated with the three selected industries and the results are presented in Table 4.15.

Table 4.15 Years worked by Industry

<b>INDUSTRY</b>	<b>FREQUENCY</b>	<b>MEAN</b>
Textile	37	8.40
Pharmaceutical	30	4.80
Food processing	33	4.20

D.f=2, F= 27.90, P < 0.00001, Eta<sup>2</sup> = 0.39

With respect to the data presented in Table 4.15, the type of industry determines 39% of variation on the duration of service with less than .00001 probability level of error. The findings indicate that women employees in the textile industry had worked for the longest number of years (8 years) as compared to food processing industry which had an average of 4 years. These data are summarized in Table 4.16.

Table 4.16. Years worked by firm

<b>FIRM</b>	<b>FREQUENCY</b>	<b>MEAN</b>
Sunflug	21	7.6
Fine Spinners ltd.	16	9.3
Beta Chemicals	10	4.9
SmithKline Beacham	20	4.8
House of Manji	20	4.7
P.J. Products	13	3.8

D.f = 5, F = 11.6, P < 0.00001, Eta<sup>2</sup> = 0.38

The variations in worker turnover were partly explained by the nature of employees' terms of employment. Most of the employees in the food processing were casual and so terminated their appointments/contracts earlier than their counterparts in the textile industry who were mostly permanent. In addition, the majority of women in food processing and the pharmaceutical industries were trained and therefore likely to leave their jobs in favour of better ones.

#### 4.5.1.4 Age

One of the considerations in this study was to ascertain the way in which the industry influences the age of the employed women. The data obtained on the age of women were correlated with the three selected industries and the results are presented in Table 4.17.

Table 4.17. Age by Industry

INDUSTRY	CASES	MEAN
Textile	37	32
Pharmaceutical	30	31
Food processing	33	30

D.F= 2, F=3.14, P<. 0476, Eta<sup>2</sup>=0.10

According to the data presented in Table 4.17, the type of industry contributed 10% of variation on the ages of the employed women with less than 0.0476 probability level of error.

Findings from the study indicated that textile industry's Fine Spinners had the highest average age of 32 years as compared to food processing's SmithKline Beacham whose average age was 28 years. The explanation in respect to observed age difference arises from the terms of employment. In textile industry most employees are on permanent terms and obtain experience through on-the-job training.

## **4.5.2 WORKING CONDITIONS**

It was hypothesized that the working women will experience more health problems in the textile as compared to pharmaceutical and food processing due to the nature of the working conditions.

### **4.5.2.1 Satisfaction rate**

It will be recalled that satisfaction was used as a broad indicator of complaints involving wages, stress and/or discrimination. The data obtained from the satisfaction ratings were classified with the three selected industries and the results are presented in Table 4.18.

Table 4.18. Industry by Satisfaction rate

INDUSTRY	CASES	MEAN
Textile	37	1
Pharmaceutical	30	2
Food processing	33	2

D.f = 2, F = 22.12, P < 0.0001, Eta<sup>2</sup> = 0.31

Results in Table 4.18 indicate a considerable 31% influence by the industry on the satisfaction level of the women employees with probability of error less than 0.00001. It can therefore be concluded that the textile industry which includes Sunflug and Fine Spinners is characterized by lower ratings compared to the House of Manji and P.J Products firms of food processing whose women workers were fairly satisfied.

#### **4.5.2.2 Working hours.**

It will be recalled that the prediction in respect to working conditions was that duration of working hours will be longer in textile as compared to pharmaceutical and food processing. The complaints reported on working hours were classified with the three selected industries and the results are presented in Table 4.19.

Table 4.19. Industry by working hours

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	3.7
Pharmaceutical	30	3.1
Food processing	33	2.6

D.f=2, F = 14.2, P < 0.00001, Eta<sup>2</sup> =0.23

The data presented in Table 4.19 indicate an influence of 23% the industry has on the duration of working hours of its women employees with probability level of error less than 0.00001. It was observed that the industries impose working hours over and above the ILO 40-hour week convention of 1935 (No.47).

It can be therefore concluded that the textile industry which include Fine Spinners had the highest reported complaints on the duration of working hours as compared to House of Manji of Food Processing which had the least number of working hours. This may be explained by the existence of shift work in food processing industry which has fixed working hours.

### 4.5.2.3 Workload

It had been predicted as part of the working conditions that cases of workload would be higher in textile as compared to pharmaceutical and food processing. Reported cases of workload were classified with the three selected industries and the results are presented in Table 4.20.

Table 4.20. Industry by workload

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	3.7
Pharmaceutical	30	2.9
Food processing	33	2.6

D.F=2, F=15.8, P<.00001, Eta<sup>2</sup>=0.25

The data in Table 4.20 indicate that industry influence 25% of cases of workload among women workers with less than 0.00001 probability level of error. Data obtained on workload from the firms was presented in Table 4.21.

Table 4.21. Firm by workload

FIRM	CASES	MEAN
Sunflag	21	3.4
Fine Spinners	16	4.0
Beta Chemicals	10	1.8
SmithKline Beacham	20	3.5
House of Manji	20	1.6
P. J. Products	13	3.2

D.F=5, F=19.2, P<.00001, Eta<sup>2</sup>=0.68

Data on Table 4.21 shows that Fine Spinners, a factory under the textile industry is characterized by higher cases of work overload as compared to food processing's House of Manji which had the lowest. From these results it can be concluded that the type of industry has a direct influence on the workload of women workers. This difference in workload between firms may be attributed to the managerial and policy factors adopted by the various industries. The textile industry has most of its duties requiring high manual labour than the other two categories of industries.

Further, the standing periods were correlated to the type of industry and resulted to a 25% influence at less than 0.00001 probability level of error. Again reported cases of long standing periods were more in the textile industry as compared to pharmaceutical and food processing. Indeed respondents reported that duration of standing ranged from eight normal working hours to fourteen overtime hours. Women in textile industry had experienced long-standing periods because most of them were engaged in packing duties, which required them to stand for long hours.

### 4.5.3 WORK ENVIRONMENT

In addition to working conditions, work environment was examined by the way in which security and health care measures were maintained in the three selected industries. Specific health measures that were taken into account included lighting systems, emergency escapes, drainage systems, fire appliances, waste disposal systems and cooling systems

#### 4.5.3.1 Lighting systems

The ratings of lighting systems were classified with the three industries and the results are summarized in Table 4.22.

Table 4.22 Industry by lighting systems

INDUSTRY	CASES	MEAN
Textile	37	2.60
Pharmaceutical	30	2.56
Food processing	33	2.96

D.F=2, F=6.56, P<.0021, Eta<sup>2</sup>=0.12

The data presented in Table 4.22 indicate that the type of industry contributes 12% of variation on the rating of lighting systems with the probability of error less than

.00001. Textile industry had the least rated level of maintenance as compared to the other two industries. It can be concluded therefore that lack of maintenance of lighting systems contributes to poor work environment and related health problems.

#### 4.5.3.2 Emergency escapes

The ratings of maintenance of emergence escapes were classified with the three selected industries and the results are summarized in Table 4.23.

Table 4.23. Industry by emergency escapes

INDUSTRY	CASES	MEAN
Textile	37	1
Pharmaceutical	30	1.4
Food processing	33	1.8

D.F=2, F=37.3, P<.00001, Eta<sup>2</sup>=0.43

Results in Table 4.23 indicate that the type of industry influences the availability and also maintenance of emergency escapes by 43% with less than 0.00001 probability level of error.

It was noted that in the textile industry, there were no emergency escapes as compared to food processing and pharmaceutical firms, which had theirs fairly maintained. Lack of emergency escapes was reported to be a security measure over

theft and was indeed a health risk in case of dangers such as fire outbreaks which had been reported in other industries.

#### 4.5.3.3 Drainage systems

It will be recognized that drainage system was examined because of the various reports associating it with health conditions; that is, appropriate drainage contributes to good health by reducing chances of infection.

The ratings on the maintenance of the drainage systems were classified with the three selected industries and results presented in the Table 4.24.

Table 4.24. Industry by drainage systems

INDUSTRY	CASES	MEAN
Textile	37	1.7
Pharmaceutical	30	1.9
Food processing	33	2.4

D.F=2, F=21.8, P<.00001, Eta<sup>2</sup>=0.31

With the results in Table 4.24, it can be noted that the type of industry influences the rating on the maintenance of drainage systems by 31% with less than .00001 probability level of error.

The data shows that the textile industry, which includes Fine Spinners Limited, does not maintain its drainage systems as compared to P.J Products of the Food Processing industry, which fairly maintains its drainage systems (Table 32, appendix). It can therefore be concluded that maintenance of drainage systems reduces the incidences of ill health and thus contributes to good health among the women employees.

#### **4.5.3.4 Other Aspects of Work environment**

It was observed that the type of industry influences the maintenance of fire appliances by a variation of 54% with less than 0.00001 level of error (Table 33, appendix). Indeed the data indicate that Sunflug, a textile firm had never maintained its fire appliances as compared to P.J Products, a food processing firm whose fire appliances were fairly maintained. It can be concluded that the maintenance of fire appliances contributes positively to the health conditions of women employees.

It was also observed that the type of industry influences the maintenance of heat and cooling systems by a correlation of 18% with less than 0.0001 probability level of error (Table 35, appendix). In addition, it was observed that the type of industry influenced the maintenance of noise regulating systems by a correlation of 23% with less than 0.00001 probability level of error. It was noted that the textile firms had no noise regulating systems as compared to food processing and pharmaceutical firms, which had fairly maintained systems. (Tables 37, and 38, appendix).

#### 4.5.4 HEALTH PROBLEMS

It was hypothesized that women will experience more health problems in textile as compared to pharmaceutical and food processing industries.

##### 4.5.4.1 Stress

It will be recalled that stress was used as a general indicator of the health problems experienced by working women in industrial occupations. In this respect it was predicted that cases of health problems will be higher in textile as compared to pharmaceuticals and food processing. Reported cases of stress were correlated with the three selected industries and results are summarized in Table 4.25.

Table 4.25 Industry by Stress

INDUSTRY	CASES	MEAN
Textile	37	4.0
Pharmaceutical	30	3.6
Food processing	33	3.4

D.f=2, F =3.8, P < 0.0264, Eta<sup>2</sup> =0.10

According to the data presented in Table 4.25, the type of industry contributes 10% of variation on stress with the probability level of less than 0.0264. The findings

show that women employees in textile industry are more stressed as compared to pharmaceutical and food processing industries.

#### 4.5.4.2 Head ache

It will be recalled that headache was used as one of the specific indicators of health problems experienced by working women in industrial occupations. Reported cases of headache were correlated with the three selected industries and the results are presented in Table 4.26 below.

Table 4.26 Industry by Headache

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	4.0
Pharmaceutical	30	3.7
Food processing	33	2.7

D.f=2, F =92.6, P< 0.00001, Eta<sup>2</sup> =0.66

The data in Table 4.26 reflect 66% influence by industry on headache experienced by working women in the selected industries with probability level of error less than 0.00001. Indeed, textile industry, particularly Fine Spinners and Sunflg represented the highest cases of headache as compared to food processing's House of Manji that

had the least rate of experienced cases. This observation was expected because textile industry exposed its women workers to high temperatures within their work places.

#### 4.5.4.3 Chest complications

Incidences of chest complications were used as a specific indicator of the health problems experienced by working women in the selected industries. The reported incidences of chest complications were classified with the three selected industries and the results are presented in the Table 4.27.

Table 4.27. Industry by chest complication

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	4.0
Pharmaceutical	30	3.7
Food processing	33	4.0

D.f=2, F = 12.35, P < 0.00001, Eta2 =0.20

The data in Table 4.27 indicate that industry influence 20% of cases related to chest complications among women workers with less than 0.00001 probability level of error.

The findings indicate that textile and food processing reported the highest cases of chest complications as compared to the pharmaceuticals. This is probably because most women in the two industries are engaged in manual duties such as packing, tailoring and checking which require them to use more physical strength.

#### **4.5.5 MANAGEMENT PRACTISES AND POLICY INITIATIVES**

The hypothesis to be tested was that lack of management adoption of industrial policy initiatives would be associated with greater incidences of poor working conditions. Intervention industrial initiatives were correlated with the three selected industries as discussed in the subsequent sections.

##### **4.5.5.1 Technical Advice**

The frequency of technical advice given to women employees was classified with the three industries and the results are summarized in Table 4.28.

Table 4.28 Industry by technical advice

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	1.0
Pharmaceutical	30	1.5
Food processing	33	1.54

D.F=2, F=21.04, P<.00001, Eta<sup>2</sup>=0.30

According to these data, the frequency of technical advice given to women is associated with the type of industry by 30% with less than .00001 probability level of error. Indeed, it was reported and noted that the textile industry never provided technical advice to its women employees as compared to food processing's House of Manji which provided to its women workers at least once in three months. It can be therefore concluded that technical advice make an important contribution to the factors that could influence the health of women workers.

#### 4.5.5.2 Medical Assistance

In addition, reported frequency of medical assistance was correlated with the three selected industries and the results are presented in Table 4.29.

Table 4.29 Industry by medical assistance

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	1.0
Pharmaceutical	30	2.3
Food processing	33	2.5

D.F=2, F=39.9, P<.00001, Eta<sup>2</sup>=0.43

According to these data presented in Table 4.29, the type of industry contributes 43% of variation on the provision of medical assistance with less than .00001 probability level of error.

Indeed it was noted that the textile firms (Sunflug and Fine Spinners) never provided medical assistance to their women workers as compared to P.J. Products of food processing which always provided for its women employees. This disparity is more due to the terms of service where no provision is made for medical assistance. This suggests that the management in the textile industry has not taken initiatives to improve the terms of service of its employees.

#### **4.5.5.3 Protective wears**

The rating on the provision of protective wear was classified with the three selected industries and the results are presented in Table 4.30.

Table 4.30. Industry by protective wears

<b>INDUSTRY</b>	<b>CASES</b>	<b>MEAN</b>
Textile	37	3.1
Pharmaceutical	30	3.8
Food Processing	33	4.0

D.F=2, F=84.6, P<.00001, Eta<sup>2</sup>=0.64

With respect to data presented in Table 4.30, the industry determines 64% of the variation in the provision of protective wears to women employees with less than 0.00001 probability level of error. It was noted that the textile industry's Fine Spinners limited indicated the lowest provision of protective wear as compared to House of Manji and P.J Products both of food processing industry. In addition, it was observed that women employees in the textile industry were not provided with breathing muffs as compared to the other industries although they were exposed to cotton dusts which resulted into illnesses such as throat infections, asthma and tuberculosis. It can be concluded that protective wears contribute to good health conditions among women workers.