

**INFLUENCE OF OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT ON  
TEACHERS' PERFORMANCE OF DUTIES IN SELECTED PUBLIC SECONDARY  
SCHOOLS OF LIMURU DISTRICT, KENYA.**

**BY**

**CECILIA WANGECI MUTHINJI**

**UNIVERSITY OF NAIROBI  
KIKUYU LIBRARY  
P. O. Box 92  
KIKUYU**

**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN  
PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI.**

## DECLARATION

I hereby declare that this project report is my original work and has not been presented to any other university or institution of learning for any award.

Name: Cecilia Wangeci Muthinji

L50/76806/2009

Signature .....



Date .....

26/7/2012

This research project has been submitted with my approval as the university supervisor.

Signature: .....



Date: .....

26/7/2012

Dr. Harriet J Kidombo

Senior lecturer

Department of Extra mural Studies,

University of Nairobi

## **DEDICATION**

This work is dedicated to my late parents Joseph Muthinji Gioko and Lucy wangui Muthinji, for instilling in me a lifelong love for knowledge.

## ACKNOWLEDGEMENT

I first acknowledge that it has taken the grace of God for me to do this work.

I am also very grateful to my supervisor Dr. Kidombo for her understanding, patience, and scholarly guidance in every step of preparation of this report. Her comments and support shaped the development of this report.

My appreciation also goes to all lecturers who guided me in the entire course.

Finally I am grateful to my husband and children for being there for me all the time, for their support and encouragement. You have been my source of inspiration. God Bless you all.

# TABLE OF CONTENTS

TITLE	PAGE
DECLARATION.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iii
TABLE OF CONTENT.....	iv-vi
LIST OF TABLES.....	vii-viii
LIST OF FIGURES.....	ix
LIST OF APPENDICES.....	x
LIST OF ABBREVIATIONS & ACRONYMS.....	xi
ABSTRACT.....	xii
<b>CHAPTER ONE: INTRODUCTION</b>	
1.1 Background of the study.....	1
1.2 Statement of the problem.....	3
1.3 General objective.....	5
1.4 specific objectives of the study.....	5
1.5 Research questions.....	5
1.6 Significant of the study.....	6
1.7 Research hypothesis.....	7
1.8 Limitations of the study.....	7
1.9 Delimitation of the study.....	7
1.10 Definition of the study.....	9
1.11 Organization of the study.....	9

## **CHAPTER TWO: LITERATURE REVIEW**

2.1 Introduction.....	10
2.2 Historical perspectives.....	10
2.3 Kenyan case.....	11
2.4 Occupational safety.....	12
2.5 Occupational health.....	16
2.6 Occupational physical environments.....	21
2.7 Occupational Social environment.....	24
2.8 Theoretical frame work.....	26
2.9 Conceptual framework.....	27
2.10 Summary of the literature.....	29

## **CHAPTER THREE: RESEARCH METHODOLOGY**

3.1 Introduction .....	30
3.2 Research design.....	30
3.3 Target population.....	31
3.4 Sample size and sample selection.....	31
3.5 Data collection procedure.....	33
3.5 Research instruments.....	33
3.6 Validity of the instruments.....	34
3.7 Reliability of research instruments.....	34
3.8 Data analysis procedures.....	35
3.9 Operational definition of variables.....	36.

## **CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION.**

4.1 Introduction .....	39
4.2 Response rate.....	39
4.3 Demographic data.....	39
4.4. Influence of occupational safety on teachers performance duties.....	42
4.5 Influence of occupational health on teachers performance duties.....	46
4.6 Influence of physical environment on teachers performance duties.....	50
4.7 Influence of social environment on teachers performance of duties.....	51
4.8 Analyses on the study hypotheses.....	52
4.9 Summary of the chapter.....	56

## **CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS**

5.1 Introduction.....	57
5.2 Summary of the findings.....	57
5.3 Discussions of findings.....	61
5.3 Conclusions.....	63
5.4 Recommendations.....	65
5.5 Suggestions for further research.....	66
REFERENCES.....	67-70
APPENDICES.....	71
Appendix: Teachers questionnaire.....	71-77

## LIST OF TABLES

Page

Table 2.1 Conceptual framework.....	28
Table 3.1 Distribution of schools, teachers and their categories in Limuru district.....	32
Table 3.2 Operationalisation of variables in the study.....	37-38
Table 4.1 Questionnaire return rate.....	39
Table 4.2 Respondents gender distribution.....	40
Table 4.3 Respondents professional training.....	41
Table 4.4 Teaching Experience.....	41
Table 4.5 Respondents subject groups.....	42
Table 4.6 Respondents level of agreement on safety of school structures.....	42
Table 4.7 Respondents level of agreement on availability of fire extinguishers.....	43
Table 4.8 Respondents level of agreement on fire training.....	43
Table 4.9 Availability of emergency doors in schools.....	44
Table 4.10 Precautionary measures against slips and falls.....	45
Table 4.11 Use of comfortable office furniture.....	45
Table 4.12 Respondents training level on health issues.....	46
Table 4.13 use of protective clothing.....	47
Table 4.14 Teachers responses on the handling of emergencies in the schools.....	48
Table 4.15 Use of dining areas.....	48
Table 4.16 Work related stress.....	49
Table 4.17 Respondents common work related ailment.....	49
Table 4.18 Noise control in the staffroom.....	50



Table 4.19 Respondents level of agreement on proper lighting in the classrooms and offices...	51
Table 4.20 Respondents level of agreement on management sensitivity to teachers concerns...	51
Table 4.8.1 Chi-square analysis on the air quality in classrooms and school buildings safety ...	53
Table 4.8.2 Chi-square analysis on teachers sick leaves and work related stress.....	54
Table 4.8.3 Chi- square analyses on teachers sick leaves and clear decision communication to teacher.....	55

# LIST OF FIGURES

	Page
Fig 1 Conceptual framework.....	28

**LIST OF APPENDICES**

Appendix: Teacher's questionnaire.....73

## LIST OF ABBREVIATIONS / ACRONYMS

E.U-	European union
O.S.H.E	Occupational Safety Health
ILO	International Labor Organization
HVAC	Heating Ventilation and Air Conditioning
W.H.O	World Health Organization
MSDs	Musculoskeletal Disorders
RSIs	Repetitive Strain Injuries
CTDs	Cumulative Trauma Disorders
OOS	Occupational Overuse Syndrome
OHS	Occupational Health Services
U.K	United Kingdom

UNIVERSITY OF NAIROBI  
KIKUYU LIBRARY  
P. O. Box 92  
KIKUYU

## ABSTRACT

Today technological progress and intense competitive pressures bring rapid change in working conditions work processes and organization. These have consequently led to new hazards and risks to which workers are exposed to. Recently there has been a sustained focus on understanding the school as an organization in which all sectors are looking to maximize productivity and efficiency and ensure long term sustainability of their business, to achieve this; the well being of workers is of great importance, especially .when sickness presence is costing more than absence. It is imperative that employers focus on employees' safety, health and environment in the workplace, and tackle occupational safety, health and environment challenges continuously, and build effective responses into dynamic management strategies.

Teachers have always played a crucial role in all educational processes, this has all along been recognized and stressed in all recent evaluations of the educational setup in this country, their performance is however, the most crucial input in education field, whatever policies one may lay down in the ultimate analyses these has to be interpreted and implemented by teachers. The promotion of their occupational wellbeing is very important as this; together with the school practices may go a long way in promoting healthy learning

Efforts to predict and explain differences in level of performance among teachers has dominated the work of psychologists, researchers and policymakers from this one thing is clear, that performance of teachers is not commensurate with their qualifications and professional training possessed by them, but rather a sum of many contributory factors.

Based on this reason, this study therefore will investigate the O.S.H.E of teachers in public secondary schools in limuru district as well as establish the influence these have on teachers' performance of duties

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the study

Occupational safety and environment (O.S.H.E) is a cross disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. According to I.L.O and W.H.O (1959), O.S.H.E should aim at promotion and maintenance of the highest degree of physical, mental and social well being of workers in all occupation, the prevention of departures amongst workers from health, caused by their working conditions, the protection of workers in their employment from risks resulting from factors adverse to health; the placement and maintenance of workers in an occupational environment adapted to his physiological ability and to summarize, “the adaptation of work to man and each man to his job.”

Several studies have shown that sickness absence related to O.S.H.E, cost employers billions of money each year, while the cost of employees working when they are ill or not fully engaged is estimated to be nearly twice as high (I.L.O 2002). Millions of workers lose their lives through occupational accidents each year and the number of those injured, maimed or psychologically traumatized continues to increase.

Teaching is rarely considered an occupation with lots of hazards and risks. However, apart from being a complex endeavor, the range of hazards to which teachers are exposed to is very wide. There are hazards which are commonly met by all teachers, while others affect teachers of particular subjects. Consequently, occupational illnesses are not easily identified as are injuries and many go unreported especially when the employer or worker is unable to link exposure with

the symptoms the employees exhibit (Reese, 2009). This probably explains the low number of reported injuries and illness among teachers. Regrettably, not so much is known about the accident severity and frequency rate among teachers (Litch, 1973) the situation is further aggravated by lack of effective legislation guiding O.S.H.E management in schools, inadequate funds and changing technology. In addition, teachers do not seem yet aware of the importance of reporting near – miss incidents.

A powerful case can be made for continuous pursuit of performance excellence of teachers. First, the capability of the teaching force is the most crucial to the delivery of school aims to the caliber of education offered, and to the quality of educational outcomes (Goddard&Emerson2006). Secondly, it not only improves the quality of teaching for the benefit of students, and the Nation, but also helps raise standards, increase teachers' job satisfaction and develops professionalism and expertise. It is central to effective human resource management processes, such as staff recognition, feedback, work needs and career guidance (Ahmadrua 2006). It is also important to the government policy makers for strategic planning purposes.

Teacher performance assessment has been adopted in many regions of the world as a way of promoting reflective teaching. In the state of California, U.S.A, legislation was passed in 1998 that require teacher candidates to successfully complete a teaching performance assessment to obtain preliminary teaching credentials and to assess the contributions a teacher will make to the education programs (Chung, 2008).

In Kenya, several strategies have been adopted by the employer to raise teachers' performance, such as use of incentive schemes and numerous reform measures like awarding study leaves and other leaves to the deserving teachers, and better remuneration.

This study seeks to contribute to such efforts by investigating the extent to which O.S.H.E influence teachers' performance of duties.

## **1.2 Statement of the problem**

Presently, the duties of Kenyan teachers are not limited to teaching in classes. In addition, they are required by contract to work additional hours as may be needed to discharge other duties like prepare for lessons, (lesson planning) assess students exercises, prepare teaching / learning resources (such as charts) ,carry out guidance and counseling of students, perform non-teaching clerical duties and satisfy requests from management. They also head the institution (principals), department and classes, take charge of home science room, computer lab, workshops (incase of woodwork and metalwork), maintain students discipline both inside and outside classrooms and train students for different sports and games. They too, accompany students to field visits and other trips. As a result, teachers are exposed to many occupational health, safety and environmental hazards, emanating from their variety of job functions.

The positive impact of introducing occupational safety, health and environment (O.S.H.E.) management systems at the organizational level, both on the reduction of hazards and risks and on productivity, is now recognized by employers and governments (I.L.O, 2001). In U.K for instance, adherence to O.S.H.E. regulations in all workplaces, is enforced by Health and safety executive (H.S.E.) created through an act of parliament (<http://www.legislation.hmso.gov.uk>). In U.S.A the same is done by occupational safety and administration in the department of labor



(<http://www.OSHA.gov>). In Canada the Canadian Centre for Occupational Health and Safety (C.C.O.H.S) an agency of the Government of Canada, provides information and other related services on occupational safety health and environment of workers. In Peoples' Republic of China, the ministry of health is responsible for occupational diseases prevention and, state administration of work safety.

While it is clear that O.S.H.E is a growing concern internationally, in Kenya it has not been accorded the same emphasis. Implementation of O.S.H.E act, in which a school is focused on as a workplace as well as an institution for learning, is low. The available health and safety policies and guidelines for use in schools, details a lot on the health and safety of students and pupils, but has very scanty to no information on the same about teachers. Ironically, teachers are entrusted with the implementation of these policies.

Herein then lies the crux of the matter. Since the implementation of O.S.H.E in schools is still low, could this be a factor influencing teachers' performance of duties? This study therefore seeks to show the relevance of occupational safety, health and environment in teaching occupation, and investigate the influence that the occupational hazards teachers are exposed to, have, on the performance of their duties, previously highlighted in this study.

### **1.3 General objective**

The general objective of this study was to establish the influence of occupational safety, health and environment, on teachers' performance of duties, in public secondary schools of Limuru District.

### **1.4 Specific objectives of the study**

The objectives guiding this study were as follows:

- I. Examine the extent to which occupational safety hazards influenced teachers' performance of duties.
- II. Establish the extent to which occupational health hazards influenced teachers' performance of duties.
- III. Establish the extent to which school physical environment influenced teachers' performance of duties.
- IV. Examine whether school social environment influenced teachers' performance of duties

### **1.5 Research questions**

- I. To what extent do occupational health hazards influence teachers' performance of duties?
- II. To what extent do occupational safety hazards influence teachers' performance of duties?
- III. What influence has the schools physical environment on teachers' performance of duties?
- IV. How does the school social environment influence teachers' performance of duties?

## **1.6 Research hypothesis**

In order to answer the research questions adequately, the following null hypothesis were formulated

**H1** There is no significant relationship between occupational health of teachers and their duty performance in Limuru district.

**H2** There is no significant relationship between occupational safety of teachers and their duty performance in Limuru district.

**H3** occupational environment of teachers has no significance in the way teacher perform duties in Limuru district

## **1.7 Significance of the study**

The study revealed the possible hazards associated with teaching occupation, which may interfere with the way teachers perform their enormous duties. The researcher felt this would be important information to the teachers who will be sensitized on the need to observe safety, health and care of social and physical environment, whether at work or at home, in order to avoid the related consequences that these may have on the excellent performance of their duties. They would also benefit from the results of the study as this may be used to institute intervention measures.

The study would also benefit public policy makers as they would understand that teaching profession has a wide range of hazards that require consideration when formulating policies as they could affect performance of teachers and the education outcomes negatively. The study would also provide data useful for planning purposes.

Lastly, the study would benefit the academia and researchers as it will contribute to new knowledge.

### **1.8 Limitation of the study**

The researcher felt that time and financial resources available for this study may not be enough to allow the researcher study all the secondary schools in Limuru District. Owing to time and financial constraints, the study focused on selected public secondary schools of Limuru District only.

Similarly getting the cooperation of the target population, which is the teachers in public secondary schools, in Limuru district, to avail themselves for interview, raised challenges for the researcher because it was assumed that they might fear giving answers seen to disapprove the operations of their schools and themselves. To enhance cooperation from respondents, the researcher assured them confidentiality of the information provided, as well as in the utilization of data released to the researcher by the respondents. The researcher also attached an accompanying introductory letter from the university, to dispel such fears

### **1.9 Delimitation of the study**

The study focused on selected public secondary schools of Limuru District only. Although a school constitutes many workers, this study confined itself to the O.S.H.E of teachers in public secondary schools in limuru district. For the purpose of this study the researcher did not dwell on other categories of secondary schools, such as private schools in the area.

### **1.10 Assumptions of the study**

The assumptions of the study are that the sample would represent the population, and that the respondents would answer questions correctly and truthfully, and the data collection instruments would be valid and reliable for measuring the desired constructs.

## 1.11 definitions of terms

**Occupation:** For the purpose of this study will be considered to refer to the teaching process

**Ergonomics:** - refers to designing of the workplace furniture, equipments and environment to fit the user; and prevent repetitive strain injuries.

**Occupational safety:** - Reduction of school-work related injuries and illnesses, among the teachers

**occupational health :** Promotion and maintenance to the highest degree of physical , mental and social wellbeing of teachers in their occupation.

**Occupational hazard:** Any condition at the workplace (school) that can cause temporary or permanent injury to the health of the teachers.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter evaluates recent research studies that have been carried out on the influence of OSHE on teacher performance. The literature begins with a review on: the historical perspectives of OSHE, Kenyan perspective, and then goes on to review the literature on the influence of occupational safety hazards, occupational health hazards, occupational environment hazards-physical and social environment, on teachers. Thereafter is the theoretical framework and conceptual framework.

#### 2.2 Occupational health safety and environment (QSHE): historical perspectives.

The industrial revolution that swept across Europe in the 19<sup>th</sup> century triggered concerns about health threats posed by dangerous working conditions (W.H.O, 2001). Concerns about occupational safety, health and environment continued into the 20<sup>th</sup> century and led to the creation of the International labour organization (I.L.O) in 1919. The I.L.O constitution emphasized the global nature of the threats to occupational safety and health, by assessing the existing conditions of labor and calling for urgent improvement.

Occupational safety, health and environment Act of 1970 forms the foundation of OSHE. It was developed in USA, to assure safe and healthy conditions for workers, by authorizing enforcement of the standards developed under the act and also assist the states by providing research information, education and training in the field of occupational safety, health and for other purposes.

In European Union (E.U.), the health and safety Act of 1974, resulted from the findings of the Roberns Report published in 1972. It produced conclusions and recommendations upon which the health and safety act (1974) was based. In summary, health and safety in the workplaces has been improved in most industrialized countries over the past 20-30 years.

The situation in developing countries however, is relatively unclear, largely because of independent accident and disease recognition methods, record keeping and reporting mechanism. However, it is estimated that at least 250 million occupational accidents occur every year worldwide, most of them occurring in developing countries.

### 2.3 Kenyan case

The enactment of Factories act, cap 514 in 1951, saw the emergence of occupational safety and health in Kenya. The crafting of this legislation was prompted by the enactment of the workers compensation act 236, 1948.

In 1974, the then minister of labour requested I.L.O during the 62<sup>nd</sup> international labour conference for assistance to strengthen factory inspection, and in the establishment of specialized inspections. This culminated in the I.L.O/FINNIDA project that established divisions namely: engineering, medical and hygiene in support of the general inspections.

This led to the recruitment and training of three medical officers, four nurses, four hygienist and, establishment of Laboratory and work environment.

This was the first time that coherent occupational health services (O.H.S) were offered in Kenya.

Although occupational S.H.E are referred to in several statues of Kenya such as public health act cap 242, environment management and co-ordination act 1999, petroleum act cap 110, the foods drugs and chemicals substances act cap 354, **Factories act 514**, is the primary occupational safety and health act in Kenya.



The act has been revised several times in order to reflect not only development in technology and knowledge but also address new areas of coverage other than factories/industries. The last such amendment was done in 1990, to include other places of work. With this change, occupational health services were by law extended to cover in addition to factories, other workplaces including, agriculture and workplaces employing more than two persons.

## 2.4 Occupational safety

Safety should be a concern in virtually all workplaces it is an important element to consider during the design stage of a job, any equipment, or procedures associated with the job (Hughes & ferret, 2003). Safety hazards are associated with numerous accidents and injuries experienced in workplaces. Physically matching the job to the person will ensure that the possibility of human error is minimized. Every organization (school) too, should have a clear policy for the management of safety so that everybody associated with the organization is aware of its safety aims and objectives. A proper prevention of accidents and ill-health through management systems of control should be focused on rather than looking for individuals to blame when an accident occurs. Clear responsibilities and lines of communications for everyone in the organization ought to be maintained (Hughes & ferret 2003). In USA, approximately 10% of workplace accidents occur because of unsafe conditions, processes or facilities. 15% of these are due to human error, 75% are due to oversights or omissions in policies, procedures and practices (Meres et al, 2007). Direct safety inspection may also prevent risk and hazard potential in workplaces.

Available data from developing countries, indicate that occurrence of occupational injuries, illnesses and accidents, is higher in these countries than in developed countries (I.L.O, 2000). Perhaps due to the fact some organizations (school included) hinder workplace safety efforts by

The act has been revised several times in order to reflect not only development in technology and knowledge but also address new areas of coverage other than factories/industries. The last such amendment was done in 1990, to include other places of work. With this change, occupational health services were by law extended to cover in addition to factories, other workplaces including, agriculture and workplaces employing more than two persons.

## **2.4 Occupational safety**

Safety should be a concern in virtually all workplaces it is an important element to consider during the design stage of a job, any equipment, or procedures associated with the job (Hughes & ferret, 2003). Safety hazards are associated with numerous accidents and injuries experienced in workplaces. Physically matching the job to the person will ensure that the possibility of human error is minimized. Every organization (school) too, should have a clear policy for the management of safety so that everybody associated with the organization is aware of its safety aims and objectives. A proper prevention of accidents and ill-health through management systems of control should be focused on rather than looking for individuals to blame when an accident occurs. Clear responsibilities and lines of communications for everyone in the organization ought to be maintained (Hughes & ferret 2003). In USA, approximately 10% of workplace accidents occur because of unsafe conditions, processes or facilities. 15% of these are due to human error, 75% are due to oversights or omissions in policies, procedures and practices (Meres et al, 2007). Direct safety inspection may also prevent risk and hazard potential in workplaces.

Available data from developing countries, indicate that occurrence of occupational injuries, illnesses and accidents, is higher in these countries than in developed countries (I.L.O, 2000).

Perhaps due to the fact some organizations (school included) hinder workplace safety efforts by

placing a higher emphasis on productivity than on safety measures (Mathew & Krush, 1990). Occupational safety has been cited as an important program to measure teachers (and other workers) well being (Geyer et al, 1990). In Kenya, there is an enormous literature addressing safety promotion and, evaluating various interventions in schools, however few have looked at school setting from the perspective of being a workplace. Therefore the emphasis is more on students/pupils safety than on teachers. Occupational safety with its focus to teachers as integral part of the school environment includes the dimension of school as a workplace in a framework aimed at enhancing safety of school personnel. This being the case, there are unlimited safety hazards outlined in the O.S.H.E. Act to which teachers (workers) are exposed to generally as a group or individually due to handling of specific subjects deemed risky. Such hazards may be outlined as follows:

#### **2.4. 1 Office hazards**

Offices are vulnerable to safety hazards generally met by all teachers. They include open doors and drawers, sharp corners of filing cabinets, telephone and computer cables that are crossing isles and, carpets with bulges or broken seams that often cause tripping accidents, cuts, abrasions and sprains. Office design is also linked to ergonomic safety problems such as lifting, climbing and repetitive motions which are associated with backaches and neck aches (Angle, 2005). Working in limited space, and in overcrowded offices – though being in a crowd is sometimes good - can become increasingly uncomfortable in other circumstances for teachers ( Wanner and keys , 1988) .The British health and safety executive (1995) showed that, congestion in offices can lead to “sick - building syndrome “ . Where staff complains of illness more commonly than reasonably expected

### **2.4.2 Ergonomic hazards**

The large and increasing number of teachers affected by poor workstations design, make ergonomic issues important (Linus, 2007). An ergonomically designed workstation or office will be designed for the comfort and safety of the operator. In Finland, school ergonomics are widely implemented, supported and extended in education by universities. The goal of ergonomic principle is to look for ways to make the job fit the worker, not vice versa. A comfortable table and chair are essential to teachers, as they spend long hours seated especially when marking student work. They should be designed to support the back properly throughout the working day. The chair should also allow the worker to change legs and general working position easily (Linus, 2007). In offices, lack of chairs and tables in sizes and shapes appropriate for teachers is an ergonomic problem. And so is the carrying of heavy materials to, and around the school, such as upstairs, downstairs or to classes.

The introduction of ICT in schools, means teachers and students spend long hours working with a computer. It is important therefore, to have constant application of ergonomics in computer laboratories. This has been associated with increasing efficiency of computer teachers, increased performances, reduction of fatigue and retention of skilled staff on the job (Peter and Button, 1992). Proper positioning of computers is crucial to prevent injury and pain. Computers should be placed directly in front of the teacher, perpendicular to light and should have screen protectors to protect eyes from glare.

### **2.4.3 Electricity hazards**

Electricity as a source of power in our schools and/or offices is accepted without much thought to associated hazards (I.L.O, 2006). It is considered safe, clean and a quiet method of transmitting energy. When not well handled, it can lead to safety hazards. These include electric

shock, burns, electric fires and explosions (Tylor, 2002). In schools, teachers are exposed to electric accidents, such as those caused by unsafe electric equipments or faulty electricity installations, (Hughes et al, 2005). There is also a tendency in offices to overuse multi-sockets and unfused outlet adapters, which can create overload problems. Loose cable connections are also common and are likely to cause overheating leading to fire outbreaks (Tweedy 2005).

#### **2.4.4 Slips trips and falls hazards**

Slip and falls incidents are a significant safety problem in workplaces environments. Same level falls accounted for 20-40% of occupational injuries in developed countries in 2005 (Courtney et al, 2006). Liberty mutual workplaces safety index, estimated that, in USA, the direct cost of disabling workplace falls from the same level was £6.9 billion annually. In Taiwan such falls are cited as the leading cause of occupational injuries (Theodore Courtney, 2006). Slips hazards are caused by wet or dusty floors and unsuitable footwear or floor coverings or sloping floors. Trips hazards are caused by obstructions, poor housekeeping- obstacles left on walkways, poor lighting levels, uneven floors, cables and trailing leads across walkways.

#### **2.4.5 Influence of occupational safety on teacher**

Within the school, application of ergonomics result in improved working techniques, reduced human errors and accidents and increased efficiency (Patkin, 1987). Poor ergonomics have been associated with diseases such as musculoskeletal disorders (MSDs) repetitive strain injuries (RSIs) cumulative trauma disorders (CTDs) and occupational overuse syndrome (OOS). Good ergonomic considerations promote effective lesson delivery and creativity in class (Moore 1990) suggests that the skills of good teachers are likely to be stretched to the greatest advantage in buildings designed to provide greatest amount of flexibility that is least hindrance to anything teachers may wish to do. Electric shock in offices can cause cardiac arrest, fibrillation of the

heart, asphyxia and burns of the skin. Such burns may be deep, slow to heal and often leave permanent scars, they may also occur inside the body along the path of electric current causing damage to muscle tissue and blood cells. As a result performance of the teacher in terms of mental and physical skills will usually start to fall (Davis et al 1967) Training teachers on electricity safety is therefore required, as a control measure for electrical hazards. Teachers should also be conversant with cardiovascular resuscitation and treatment of electric burns.

Working in limited space and in overcrowded offices, can become uncomfortable for teachers (Warner and Keys, 1988). This can translate to negligence of some duties such as preparation of professional documents like lesson plans, subject scheme of work and lesson notes which are crucial in teaching since they help a teacher manage time in class, assess the available resources for teaching plan the content to disseminate in class, therefore boost their confidence. (Sanders & Horn, 1998). The British health and safety executive (1995) also showed that it can lead to "sick building syndrome" where staff complain of illness more commonly than would reasonably expect. Likewise slips, falls and trips lead to injuries, Cuts, abrasions & sprains which lead to absenteeism. This unlike in other professions is a serious problem because the students can cause chaos if left unattended (Bray et al, 1986). Falls are also the leading cause to near-miss incidences. According to research, every 10 'near misses' at a particular location leads to a minor accident.

## **2.5 Occupational health**

The world health organization (W.H.O) defines health as a state of complete physical mental and social well being and not merely the absence of disease or infirmity. Occupational health operates within this framework. It is an area concerned with occupational illnesses of workers

caused by both long term and short term exposures to health hazards in their work; they are categorized as follows:

### **2.5.1 Chemical hazards**

Chemical hazards arise from excessive airborne concentration of mists, vapours, gases or solids (Gordon and Eric, 1985). They have inhalation hazard which can lead to poisoning. In addition, they may act as skin irritants or may be toxic by absorption through the skin. They can also be ingested, although this is not usually the principle route of entry into the body. Schools as workplaces, expose teachers to enormous chemical hazards (Hughes & ferret2003). School laboratories are potentially hazardous places to teachers than normal classrooms because there is presence of chemicals (irritants, corrosives, toxic, harmful and carcinogenetic substances). Science teachers who work daily in these places are at a risk of being exposed to the related hazards (Bray et al 1986).

Classrooms too have their measure of chemical hazards. The indoor air has special pollutants sources such as dust and particles of chalk. (Lowenstein, 1991), Technical / industrial subjects such metalwork, agriculture, home science and woodwork, expose teachers to chemical hazards .In a study done by Michal and Jolida (2005), it was established that metalwork exposes workers (teachers included) to metal oxides that contain organic compounds injurious to the body. While the noise associated with metal working caused hearing loss; the work itself caused distorted posture over a long period, as well as reproductive problems. Exposure to ultra violet light caused inflammation of the cornea while equipments used in metal work are safety hazards to the teachers if not properly handled. (Frey, 2005)

Lozorich (2002) established that woodworking exposes workers (teachers included) to dust, which is associated with several cancers, like those of nasal cavity, lung and gastrointestinal

track. Diseases like bronchitis and dermatitis have shown high correlation to wood dust exposure. Pesticides used by agriculture teachers are also hazardous.

### **2.5.2 Work related stress**

Teachers are subjected to heavy occupational stress that may adversely affect their mental health status and with an impact on professional performance (Kyriacou and Sutcliffe, 1978). The prevalence of workplace stress within the United Kingdom is believed to result in an average of 13 ½ lost working days each year with one in five employees believing their job to be extremely stressful (Smith et al, 2000).

In Kenya, the changes in educational system that have occurred in the past decades, brought about new demands to the teachers and has also increased precarious working conditions. Social transformations coupled with new teaching models have aggravated the problem. They have escalated the teacher's activities and social demands for teachers role, on one hand and demands of quality teaching and positive results on the other hand (Zaragoze M, 1999). Growing responsibilities and demands on teachers, and not adapting to the new demands of the profession has certainly exposed them to work related stress. This has consequently resulted to health problems among them: musculoskeletal disorders, voice problems, psychiatric disorders to name a few.

Medical and social costs due to these problems have grown increasingly in the past few years, with figures reaching billions of shillings or dollars in various countries (Silvis, 2004). Absenteeism and tardiness are also greatly influenced by occupational stress, with high economic costs (Hughes&ferret2003). A stress level among teachers is also increasing to a worrying level due to the increasing teachers' workload, Student misbehavior, which includes reluctance to follow instruction and handling of problematic students (Abdul, 2005). Others like



responsibility for students success in examination, having a large class, difficulty in completing the syllabus in the time available and lack of material resources, coupled with administrative work like managing department, stock and inventory and too much work in one time, have also been cited as stressors (Chin yin ling,2006).

Interpersonal relationship issues such as receiving unclear instruction from management, lack of participation in decision making, lack of autonomy, lack of consultation or communication, lack of colleague support and co-operation, and lack of appreciation for work done, have contributory role on teachers work related stress (chan1998, kyriacou&Sutcliffe1978) as quoted by chin 2006.

### **2.5.3 Biological hazards**

Biological hazards are transported through some forms of agent such as fungi, moulds-which grow under damp conditions, bacteria and viruses. They can cause diseases such as athletes foot, asthma attacks H.I.V (aids), ringworms among others.

### **2.5.4 Influence of occupational health to teaching**

Exposure to chemical and biological hazards poses serious health threats to teachers; voice disorders including symptoms of soreness, hoarseness, weak voice and sore throat are occupational illnesses that have been described among teachers and have been shown to emanate from exposure to chemical and biological hazards(Hughes et al, 2003)..

Many substances used in agriculture are irritants e.g. fungicides and pesticides. Irritant (non-corrosive) substances can cause skin (dermatitis) or lung (bronchial) inflammation (Hughes et al, 2003). Presence of water, gas taps, additional power points, apparatus and chemicals in the laboratories expose science teachers to a huge chunk of health and safety problems (Bray et al 1986)

In a study about quality life related to teachers' voice health problems in Greece, revealed that, majority of teachers have a good voice, however, there are job aspects that can have implications on teachers' voice and vocal health. Among those mentioned are dirty classrooms, internal and external noise, stressful social relationships, irritation and sound competition and voice abuse or misuse.

Stress problems may adversely affect mental and physical health of teachers. It may cause a range of unpleasant mental effects on teachers such as tension, frustration, anxiety, depression and poor concentration. It can lead to lack of interest at work, and reduced job satisfaction which combine to worsen their performance. (England education service advisory committee, 1998) self confidence, essential for successful teaching may be seriously affected as well (pithers&fogarly,1995)

Stressful situations can contribute to voice misuse generating extra effort and forcing adaptations in phonetic production, making the profession more vulnerable to development of dysphonia. It also leads to burnout which results to relatively impaired teachers in the quality of teaching and commitment (Wiley 2000) other aspects of teacher's work, like increase in tone of voice, speaking frequently and competition with environmental noise also expose them to dysphonia.

Lack of vocal health cause physical sensations or discomfort such as burning, cough, infections of the Larynx and hoarseness (England education service advisory committee, 1998). All these conditions can contribute to increased sickness absence which can also create stress among other teachers who have to cover for absent colleagues but still do their own work this ultimately affects the school outcomes (Yin ling 2006) and poor performance of teachers in their job.

Work-related stress contributes to musculoskeletal problems which are associated with high economic costs due to compensating schemes, medical expenses, disability pensions, lost days

of work and reduced productivity. Human errors made under the effect of occupational stress may lead to injuries or loss of lives. Work related burn out is also caused by stress and it is linked to emotional exhaustion, depression, irritability and boredom (Schultz & Schultze, 1998).

## **2.6: physical environment**

The physical environment of the school describes the physical and aesthetic surroundings of the school. The physical environment and the working conditions which it provides have been of interest to industrial and commercial organizations, particularly if they affect health, safety and welfare of employees. The aim of this is to search for those designs and conditions which maximize the efficiency or productivity of factories, offices and other workplaces (Sundstrom, 1987). Although the physical working environment in schools is not as dangerous as those of manufacturing or construction industries, it is not entirely free of occupational hazards. For instance, proper design and maintenance of ventilation system is essential in providing a healthy school environment.

In the planning of physical environment of a school therefore, various aspects need to be considered to enhance teachers and other workers performance (Bray et al 1986). These include:

### **2.6.1 Visual factors**

This refers to the quality of illumination in a place. Two aspects which need to be considered to achieve this are: first the quality of illumination in different parts of the room, which will be determined by the level of natural and artificial light available and Secondly, the way classrooms and the staffroom (offices) are arranged, such that, there are no unwanted distractions, such as windows overlooking the playing field (Bray et al ,1986) Lighting system should support tasks to be done and also minimize glare from ceilings, walls and floors. Window coverings for

workers facing the playing field should be provided to reduce glare in his study on physical settings Glynn (1982) indicated that, visual factors not only influence behavior but also conveys information about people associated with the setting, such as level of effectiveness and efficiency in their work.

### **2.6.2 Housekeeping**

Good housekeeping refers to the cleanliness and good order of equipment and facilities in the school. The quality of indoor air may deteriorate when one or more of these processes are inadequate.

### **2.6.3 Acoustic factors**

This refers to level of noise, both internal and external. In schools administrative areas, high speed copiers, telephones, cell phones, fax machines, hallways, back areas and human, can be noisy and distracting, hence become an occupational hazard (Hughes & Ferret 2003).

Porteous (1977), clearly shows that the extent to which a classroom or office is affected by noise depends on the organization of the physical environment.

### **2.6.4 Thermal factors**

This refers to temperature regulation. Temperature per se has little effect on man's performance unless it is too low or too high (Walton P, 1980). The effects of temperature especially high temperatures must be considered in relation to humidity. A good school heating, ventilation and air conditioning system (HVAC) is important in offices and classes to provide air at comfortable temperature and humidity levels and free of harmful concentrations of air pollutants.

### **2.6.5 Influence of physical environment to teachers performance of duties.**

Teachers who work in a school which is neat, pleasant and has modern facilities are likely to experience a job satisfaction and motivation than those working in an unpleasant school environment (Hayward 1997). Motivation has a substantial effect on the attribution of teacher efficacy which in turn has a positive effect on learners performance (Enderlin-Lampe, 1997). As Likeje (1991) puts it so succinctly “motivation could make a mule dance” and when it is absent, teachers are likely to consider their commitment as only “a fair day’s work for a fair day’s pay”.

Classroom physical environment presents risk agents such as chalk dust, which can negatively interfere with the teachers’ voice. Environmental factors are known to influence behavioral outcomes. A school physical environment that promotes orderly behavior by students also encourages interaction between teachers and students and efficient administrative support seen to be critical conditions for teachers to work effectively (Smith, 1989).

Noise hazards affect teachers’ performance in two ways: in short term it can prevent voice communication by the interference with reception of speech, while in the long term, it can lead to the damage of the ear (Davis & Tyler, 1967). Noise is a hazard in teaching of music, due to poorly constructed rehearsal halls. Prolonged working in such an environment causes a major hearing loss, the unfortunate part is that, loss of hearing related to acoustics, is never compensated by insurance companies as these cases are very difficult to prove (Douglas, 2003). This ironically, makes teachers become victims of the very profession they diligently trained for. Effective teaching requires intensive vocal use, but for it not to harm the teaching profession the voice has to be comfortable for the speaker and correctly projected and noise well controlled (Lillian et al, 2004).

Exposure to indoor contaminants can cause serious health problems to the teacher. The most common include headaches, dizziness, nausea, allergy attacks, respiratory problems and sometimes life threatening conditions such as legionnaire's disease. This can lead to increase in absenteeism, poor lesson delivery and attendance or in serious cases death, (USA Environmental agency, 2010).

Due to their occupational environment being characterized by permanent contact with people particularly students, teachers are at a higher risk of contracting infectious diseases such as hepatitis A (Lehman et al, 1999). Excessive exposure to high temperature may lead to disorders such a heat exhaustion and cramps.

## **2.7 School social environment Influence to teachers' performance**

The social environment describes any emotional and social conditions that affect the well being of teachers. Successfully managing a school social environment is necessary and essential educational investment. Research increasingly shows that there is a clear link between social environment, quality of schools and educational performance.

Prevention of harassment and interpersonal hostility in workplace is important (Salin D, 2008).

Harassment may emanate from colleague teachers, principal or from students. Extremely negative consequences are associated with it, such as high costs, in form of increased absenteeism, high turnover of personnel, decreased commitment and productivity. It also contributes to wok related stress (Andrea Russo et al, 2008).

Violence and violence threat are becoming more and more frequent in public institutions. In Croatia a survey conducted in E.U member states revealed that 12 % of those employed in education sector in all member states experiences some form of violence making the sector have

the second largest percentage of violence just below government and defense. Incidents of bullying at schools arouse much attention locally due to the sudden increase in number of cases of school violence reported by the media. This has put more pressure on teachers. Unfortunately not many teachers are confident enough to handle school violence. A study undertaken by bureau of labour statistics (USA, 1991), showed that assaultive behavior in workplaces often produces injury, psychological distress and economic loss.

Hostility is a social hazard that has major health problems and disease end points. It may lead to absence spells, risky behavior, alcohol consumption and even drug abuse (Smith et al, 1985). These consequently have a share of problems such as mental disorders like depression and anxiety disorders (Thomas and Morris, 2003).

## 2.8 Theoretical framework

The following is a brief examination of the theories informing this research study.

### 2.8.1 Social ecology theory

This theory is founded on systems theory. It offers a set of theoretical principles for understanding the relationship and complex interactions between diverse personal and social environmental influences on human behavior and health (Stokols, 2000). It is defined as the study of individuals and groups within the context of their various social systems. The theory comprises of several core assumptions, namely interplay between facts of both the physical and social environments in combination with personal attributes such as temperament and behavior patterns. Social ecological theory contends that certain behaviours, social roles and environmental conditions within an individual's life situation can exert a disproportionate influence on his or her well being (Grzywacz and Faqua, 2000). For example, a person's lifestyle may include several unhealthy sets of circumstances, such as a high stress job which also requires a lengthy commute between home and work. This coupled with factors in workplace, may contribute to unhealthy behaviors such as smoking, alcohol consumption and lack of physical exercise.

Social ecology theory is attributed to Murray Bookchin (Stokols, 1992) who was the first person to develop the set of principles used today to describe this field. These principles provide tools for examining health issues in relation to present day to day physical and social environments. It confirms that interpersonal strain in workplace, if the workplace itself fails to provide adequate social support and personal fulfillment; all the properties are in place for negative health outcomes.



### **2.8.2 Biopsychosocial model (BPSM)**

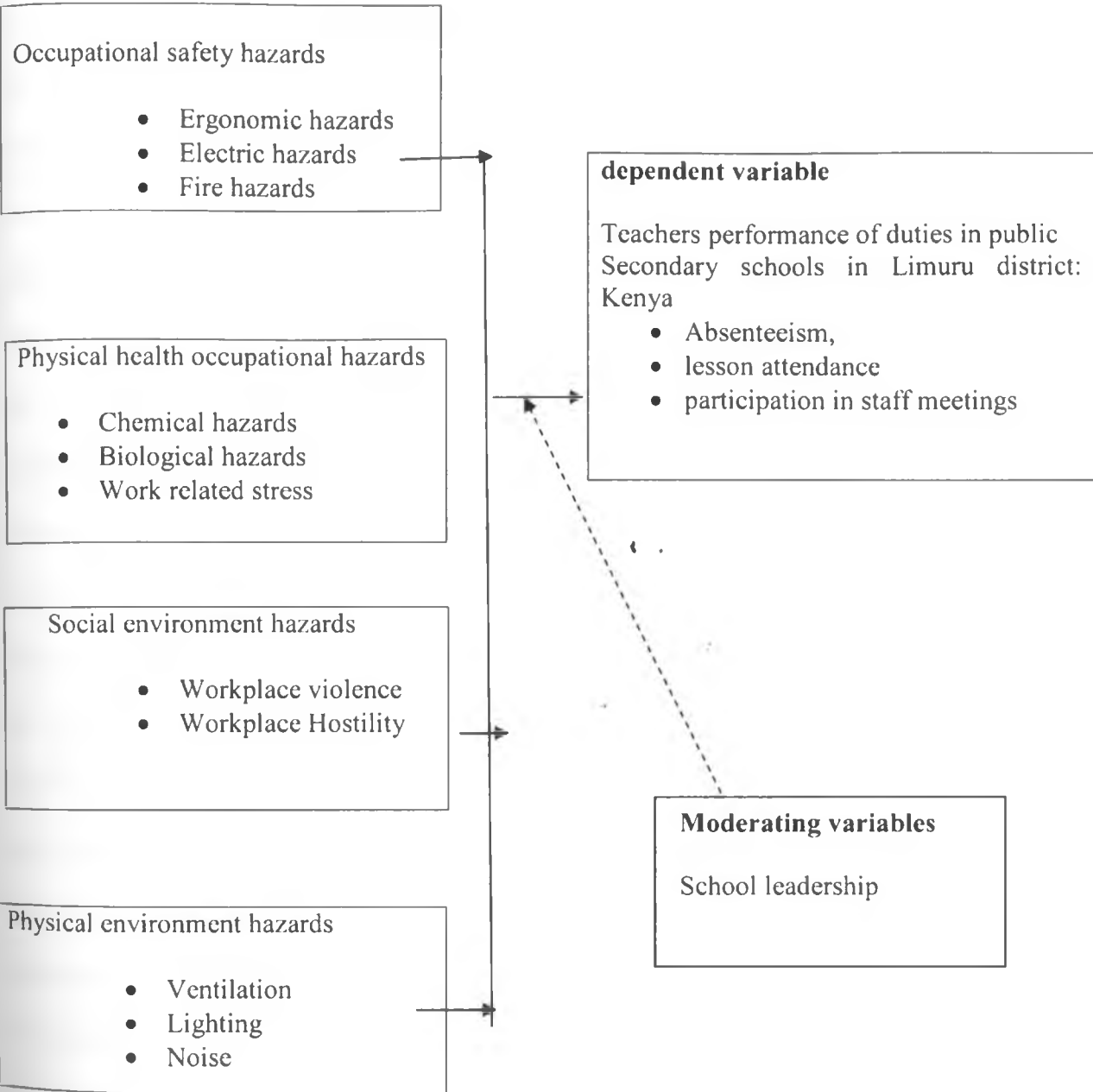
This model has been vigorously advocated by psychologists and others concerned with health of an individual considered as totality (Ogden, 1997). The model claims that: health and illnesses are the product of a combination of factors including biological characteristics, (e.g. genetic predisposition) behavioral factors (e.g. lifestyle, stress, health beliefs) and social conditions (family, social relationships). This model challenges the biomedical model which says that all health and illnesses is the product of physical processes and reactions inside the body.

The existence of BPSM owes little to any particular model or scientific theory, but it has symbolic value in showing psychosocial factors to be as important in understanding health and illness as DNA, cells and biology (Mark et al, 2008). The model aims at looking at all the biological psychological, physical and social factors that are associated with health and illness. It does not look for single causes, from the assumption that, health and illness have many causes and also produce many effects.

### **2.9 Conceptual Framework**

Conceptual framework is a graphical depiction of interrelationship between concepts and constructs. In this study, four variables were singled out. Occupational safety, which constituted ergonomics, electricity hazards, fire hazards and slips and fall .occupational health which constituted chemical hazards, biological hazards and work related stress. Physical environment hazards constituted thermal, lighting, acoustics and ventilation hazards. Social environment hazards included work related violence hostility. Indicators of teachers' performance of duties include minimum Absenteeism, lesson attendance, and attendance to staff meetings.

Diagrammatically the study's conceptual framework is shown in fig 1



**Independent variables**

Fig 1

Teacher's performance is important it is the most crucial input in the education setup in any country, thus it is important that their safety, health and environment at their places of work be promoted. Attainment of this ideal is dependent on control and consequent elimination of a number of hazards namely occupational safety hazards, occupational health hazards, and occupational environment hazards. The dependent variables in this study were being tested to find out if they influenced curriculum implementation by teachers through effective performance of their duties. The extent to which performance is dependent on these variables was the gist of the study.

## **2.10 Summary of the literature**

This chapter introduced the concept of occupational safety health and environment (O.S.H.E.) and went on to assess the growth and development of occupational safety health and environment act on which O.S.H.E is based. The chapter further discussed the implication of this act in Kenya and other countries.

The study also investigated the influence of O.S.H.E on teachers' performance of duties locally and internationally. it was guided by four main independent variables as indicated in the conceptual framework (fig 2.1) this included occupational safety hazards, occupational health hazards physical environment hazards and social environment hazards. The intervening Variables seen to affect this relationship, but were beyond the control of the researcher included; genetically related factors of a teacher, and the school leadership. Finally a conceptual framework was done depicting the interrelations of independent and dependent variables and showing the intervening variables that may have influenced the relationship..

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter describes the methodology that was used to conduct the study. This includes, research design, target population, sample size, sampling procedure, research instruments, data collection procedures, data analyzing techniques, ethical issues consideration and operational definition of variables.

#### 3.2 Research design

A research design is a plan showing how the problem under investigation can be solved (Orodho, 2003). It functions as the research blue print (Creswell, 2003). To tackle the questions posed in this study, the researcher used descriptive survey. Mugenda (1999) noted that a survey research attempts to collect data from members of the population and describes the existing phenomena by asking individuals about their perception, attitudes, behavior and values.

Descriptive survey research is designed as a method of collecting information by interviewing or administering a questionnaire to a sample of individuals to collect the information on their attitudes opinions and habits (Orodho and Kombo, 2002)

The study also employed qualitative and quantitative methods to analyze data. A mixed method approach converge findings and extend the breadth of inquiry (Creswell, 1994). Qualitative method was used as a tool, because of its broad approach towards understanding and explaining the meaning of social phenomenon in naturalistic setting (Marshall and Rossman, 1999). Quantitative method was employed to analyze Likert- scale data found on the survey questionnaire.

### **3.3 Target population**

Target population as defined by Best and Khan (1999) is the small portion of the population selected for observation and analysis. It is the population to which a researcher wants to generalize the results of a study. Based on this understanding, the target population was teachers from the 14 public secondary schools in Limuru district in Kenya. Public schools were chosen for this study because they form 80% of all schools in Limuru district. The public schools were either, fully boarding, day and boarding or fully day. Other characteristics associated with the schools included boys only, girls only or mixed.

### **3.4 sample size and sample selection**

The study adopted both probability and non probability sampling methods. Probability sampling is the process where random selection is used to select respondents with each of them having an equal chance of being included in the sample (Singleton, 1988). In non probability sampling, there is no way of specifying the probability of each unit inclusion in the sample and there is no assurance that every unit has some chance of being included. In this method, a desired number of sample units are selected deliberately or purposely, depending upon the objective of inquiry so that only the important items representing the true characteristics of the population are included in the sample (Nachmias and Nachmias 1996).

There are 14 public secondary schools in Limuru district. Which were classified into National schools and District schools (See table below) Purposive sampling technique was used to sample the schools into three main categories, that is: boys only, girls only and mixed schools. This was crucial in order to establish whether the category of the school was significant to the research questions.

According to Gay (1983) as quoted by Mugenda and Mugenda (1994), 10% of the accessible population is enough for descriptive studies; in this study 50% of the target population of 320 teachers in the district will be enough to reproduce the salient characteristics of the target population, To determine the number of teachers to include in the sample 50% of teachers from each sampled school category was taken. That is 50% of the national schools was ONE (1) school and 50% of the district schools were 6 schools, which is a total of 7 from the possible population of 14. This was done to ensure that the sample was representative of the target population. The respondents from each school were randomly selected but were distributed equally according to gender.

**Distribution of schools, teachers and their categories in Limuru district (table 3.1)**

School characteristics	Total number of schools.	Number of schools sampled. 50% of total	Number of teachers sampled. 50% of total	Total number of respondents.
NATIONAL SCHOOLS Girls only	2	1	20	20
DISTRICT SCHOOLS Girls only	4	2	20	20
Boys only	2	1	15	15
Mixed	6	3	30	30
<b>TOTAL</b>	<b>14</b>	<b>7</b>	<b>85</b>	<b>85</b>

### **3.5 Data collection procedure**

Data was collected from 85 teachers from the sampled schools, using self administered questionnaire. According to Kotler (1998), the advantage of using self administered questionnaire is to ensure the respondents privacy. Bearing this in mind, the researcher dropped the questionnaires personally. This is important as it helped the researcher establish a rapport with respondents while introducing the survey. The drop and pick approach was used. The respondents were given one week to respond after which the researcher picked them, this was done to allow enough time for responding to the questions.

### **3.6 Research instruments**

A Questionnaire was prepared for the teachers and principals. A questionnaire is a carefully designed instrument for collecting data direct from the people (Kasomo, 2006). It has an advantage of achieving rapid contact with a large number of people (Krathwohl, 1998) (Van der Maren, 1997). According to Mugenda and Mugenda (1999) questionnaire is convenient for collecting information from a large population within a short space of time and also cheap to administer. In this respect a questionnaire was used because the population is large.

It was divided into two sections named part 1 and 2. Part 1 consisted of questions aimed at getting information on teachers profile, while part 2 was sub-divided into four sections labeled A, B, C, D this sections consisted of questions aimed at getting information on occupational safety, occupational health and occupational environment of teachers respectively, The questionnaire consisted of open-ended/unstructured, close-ended/structured questions, contingency questions and matrix questions for Likert scale

The aim of using the open-ended questions was for the researcher to allow respondents to freely discuss issues without limiting the score. The close ended questions were utilized because they are quicker and easier to complete therefore touching on a wider range of information. The contingency questions were used because follow up questions were needed to get further information. Matrix questions were used to get information from questions which share the same set of responses. The questionnaires were self administered.

### **3.7 Instrument validity**

Borg and Gall (1998) define validity as the degree to which a test measures what it purports to measure while Mugenda and Mugenda (1999) defines it as the accuracy or meaningfulness of inferences which are based on research results. To enhance the validity of the questionnaire a pre-test was conducted with individuals who were randomly selected from a population similar to the target population, from the neighboring kikuyu district, because they were not part of the study samples. This helped check the appropriateness of the language, construct validity and content validity of the questionnaire. The researcher also consulted further with the study supervisor for further advice into the validity of the instrument. The researcher then made the necessary modifications.

### **3.8 Instrument reliability**

Mugenda and Mugenda (1999) define reliability as a measure of the degree in which a research instrument yields consistent results after repeated trials. Jopper (2006) defines reliability as the extent to which results are consistent over time and are an accurate representation of the total population under study; while Mulusa (1988) states that a reliable research instrument is one that



consistently produces the expected results. To assess the reliability of the instrument for this study, test-retest technique was used in which the questionnaire were administered to a group of randomly selected units that had similar characteristics to the target population, the same was repeated to the same sample after a week. The scores from both tests were correlated using Pearson product-moment correlation( $r$ ) to obtain the coefficient of reliability or stability, using the formula below. A coefficient of 0.6 or above was considered adequate for the questionnaire.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

### 3.9 Data analysis procedures

Kerlinger (1986) defines data analysis as categorizing, manipulating and summarizing of data in order to obtain answers to research questions, once data was collected it was edited by carefully inspecting it in order to identify the mistakes and any wrongly answered and not responded to items, it was then coded. This is the process of assigning numerals or other symbols to answers so that the responses can be put into a limited number of categories or classes (Kothari, 2004)

Quantitative data was analyzed using descriptive statistics. This is the use of statistics to describe, summarize and explain or make sense of a given data. The chi-square test of independence of attributes was used to test whether there was any association or relationship between the identified occupational hazards on questionnaire sections A, B, C .D and teachers performance of duties in limuru district. The test was done at 0.05 level of significance and

appropriate degrees of freedom on the formulated hypothesis. Chi-square test of independence is a statistical technique used to compare the difference between categorical frequencies when data is categorical and drawn from a population with uniform distribution in which alternative responses are equally likely (Vaughan D, 1998). Other statistics such as percentages, frequencies of distribution were used to give face values of the influence of occupational safety, health and environment on teachers. Correlation coefficient ( $r$ ) was done at a significance level of 0.05 to analyze the degree of relationships between the variables measured in sections A, B, C, D. of questionnaire with teachers work related ailments as measured in section 2, B of the questionnaire. To analyze the qualitative data, the researcher used statistical package for social sciences (SPSS) software. The quantitative data was then presented using tables, graphs, while qualitative data was presented in prose.

### **3.10 Operational definition of variables**

Kerlinger (1973) says that an operational definition assign meaning to a concept or construct by specifying the activities or operations necessary to measure it. He continues to say that, it gives meaning to variables by spelling out what the investigators must do to measure it.

**Table 3.2 shows the operationalisation of variables in the study.**

	Variables	Indicators	Measures	Scale
Prevalence of physical occupational hazards	<p><u>Independent variable</u> Chemical hazards</p> <p><u>Dependent variables</u> Teachers performance of duties</p>	<p>Safe use of chemicals</p> <p>Prevention from exposure</p> <p>Execution of control measures</p>	<p>Are Training opportunities available to acquire information</p> <p>Are there Personal protective clothing and equipment</p> <p>Is there a School nurse available all the times</p> <p>Maintenance of cleanliness in the school.</p> <p>Eating arrangements</p> <p>Proper ventilation</p>	<p>ordinal</p> <p>Nominal</p> <p>Ordinal</p> <p>Ordinal</p> <p>Ordinal</p> <p>Ordinal</p>
	<p>Independent variable Biological hazards</p> <p>Dependent variable Teachers performance of duties</p>	<p>Prevention from exposure</p> <p>Health surveillance procedures</p>	<p>Are teachers vaccinated against infectious diseases?</p> <p>Availability of Hand washing facilities</p> <p>waste disposal management processes</p>	<p>Nominal</p> <p>Nominal</p> <p>Ordinal</p> <p>Ordinal</p>
	<p>Independent variable Work related stress</p>	<p>Too much responsibilities</p> <p>Sick leaves due to stress related ailments</p> <p>Lack of flexibility in working hours to meet domestic requirements.</p>	<p>Which responsibilities each teacher has in the school</p> <p>Frequency of sick offs</p> <p>Frequency of occurrence</p>	<p>Ordinal</p> <p>Ordinal</p> <p>Ordinal</p> <p>Ordinal</p>
Prevalence of safety hazards to teachers performance of duties	<p>Independent variable Ergonomic hazards</p>	<p>Safe use of work equipments/facilities</p>	<p>Availability of Computer antiglare</p> <p>Computer desk in proper size for the user and space available.</p> <p>Are the Chairs &amp; tables comfortable?</p> <p>Is there enough space in the office</p>	<p>Nominal</p> <p>Ordinal</p> <p>Ordinal</p> <p>Ordinal</p>

			Number of furniture per teacher	Ordinal
	Independent variable Electricity hazards	Safe use of electricity appliances in the school Maintenance of electric appliances Fire safety measures	Number of sockets in the staffroom. Safe installation of electric equipments. Rules for operating and switching off electrical appliances Fire fighting Equipments  Fire safety drills/training	Nominal ordinal Ordinal Nominal Ordinal
	Falls and slips	Cleaning Sufficient lightning	Permanent stairs have guard rails Regular cleaning of floors	Nominal Ordinal
Presence of physical environment on teacher performance	Physical conditions	Facilities for rest and eating meals. Drinking water Sanitary conveniences Sufficient ventilation	Where meals are taken in. Are there Facilities for rest and eating meals? Availability of clean drinking water Availability of Sanitary facilities, Separate for men and women.	Ordinal Nominal Nominal
	Lighting	Adequate level	Must be suitable and sufficient. Emergency lighting system If there is glare from sunlight, are there suitable blinds for protection?	Ordinal Nominal Nominal
	Noise hazards	Reaction to exposure  Control measures	loss of concentration fatigue	Ordinal Ordinal Ordinal
	Social environment	Physical assaults	Frequency	Ordinal
		Violence occurrence Cases of harassment. Communication channels	Frequency Frequency  efficiency	Ordinal

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4:1 Introduction

This chapter presents the results of the data collected and further discusses the findings. Descriptive statistics such as frequencies and percentages were used to analyze responses to various questionnaire items. An inferential statistic the chi- square ( $\chi^2$ ) test of independence was also used to analyze responses to various items on the questionnaire and to test the study hypothesis at 0.05 level of significance and appropriate degrees of freedom.

#### 4:2 Response rate

A total of 85 questionnaires were issued to respondents from the sampled schools. Seventy seven (77) out of the eighty five (85) questionnaires given were answered. The analysis was therefore done using the seventy seven questionnaires received from the respondents. The results are presented as shown in the **Table 4:1**

**Table 4.1 Return rate**

Variables	frequency	Percentage %
Response	77	74.8 %
Non-response	8	35.2 %
TOTAL	85	100

The study targeted 85 respondents with 77 respondents answering the questionnaire comprising 74.8 % while the remaining 8 respondents comprising 35.2 % did not answer.

#### 4:3 Demographic Information

The following occupational information was sought from the respondents: gender, level of professional training, teaching experience and responsibilities the respondents have in their school besides classroom teaching. Table 4.2 indicates gender distribution of the teachers' interviewed.

**Table 4:2 Respondents Gender**

variable	frequency	Percentage %
Female	39	37.9 %
Male	38	36.9 %
Total	77	74.8

The above data shows the respondents gender. There were 37.9% (39) female respondents and 36.9 % (38) were males accounting to a total of 77 respondents. There was no significant difference of gender in the response; however the response of female was higher than males probably because most schools had slightly more female teachers than male teachers.

#### 4:3:1 Level of professional training.

Table 4:3 shows professional training of respondents.

variable	Frequency	Percentage %
B.Ed	56	54.4 %
D.Ed	10	9.7 %
M.Ed	4	5.2 %
Others	7	6.8 %
Total	77	74.8

The data in table 4:3 indicate that 70 of respondent's equivalent to 69.3% are trained. 4(5.2%) respondent had attained a master's degree in education. Seven of respondents had been trained in Bachelor of Science. Information on professional training was sought because teacher's competence can influence performance of duties. From the analysis it is seen that all the respondents were indeed trained teachers, they were therefore all qualified to teach in secondary school.

### 4:3:2 Professional experiences

From table 4.4 The findings indicate that teachers had varied teaching experience, 29.9% (23) respondents have a teaching experience of 10 to 15 years, 19.5% (15) respondents had teaching experience of 1yr-5 yrs. 19.5% (15) respondents had 6yrs-10yrs. while 23.4% (18) of the respondents had an experience of more than 15 years. Only 7.8% (6) respondents had experience below one (1) year.. This implied that 71 respondents had an experience of more than 5 years which should translate to good performance of duties, building on the premise that performance improve with experience.

**Table 4.4**

Variable	Frequency	Percentage (%)
Less than 1 year	6	7.8 (%)
1-5 years	15	19.5 (%)
6-10 years	15	19.5 (%)
10-15 years	23	29.9 (%)
More than 15 years	18	23.4 (%)

### 4:3:3 Respondents subject distribution

Distribution of teachers according to subjects groups is shown in table 4:5

**Table 4.5**

Variable	Frequency	Percentage (%)
Sciences	34	33.0%
Humanities	18	17.5%
Technical and applied	13	12.6%
Languages	12	11.7%
Total	77	74.8%

The findings from table 4:5, indicates that 34 teachers (33.0%) taught science subjects, 18 (17%) teachers taught humanities subjects namely History, Geography, C.R.E. 13(12.6%) teachers taught technical and applied subjects namely business studies, agriculture, home science and computer while, 12 (11.7%) teachers, taught languages namely English, Kiswahili and French

This indicates that all the subjects taught in secondary school were well represented in the sample. This would enable relevant information to be obtained as different subjects expose teachers to different occupational risks and hazards differently.

#### 4:4 occupational safety

This section presents data findings on teachers' level of agreement on implementation of occupational safety in their schools.

##### 4:4:1 Teachers level of agreement on the safety of school structures in schools.

**Table 4:6**

Response	Frequency	Percentage %
Strongly disagree	7	6.8%
Disagree	14	13.6 %
Neutral	21	20.4 %
Agree	27	26.2 %
Strongly agree	8	7.8 %
Total	77	74.8 %

The findings from table 4:4 indicate that 21(20.4%) teachers, disagreed that their school buildings were safe enough to work in. 21 (20.4%) teachers were neutral while 35 (34%) teachers agreed the buildings were safe and secure and therefore did not hinder their performance. Safe structures /buildings promote use of skills by teachers since they do not hinder anything a teacher may wish to do to ensure effective lesson delivery such as displaying charts on the wall



#### 4:4:2 fire safety measures

**Table 4:7 shows teachers' level of agreement on availability of fire extinguishers in schools**

Response	Frequency	Percentage %
Strongly disagree	22	21.4 %
Disagree	24	23.3 %
Neutral	16	15.5 %
Agree	8	7.8 %
Strongly agree	7	5.8%
Total	77	74.8%

The study findings from table 4:5 reveal that 46 (44.7%) teachers disagreed that their school had fire extinguishers that are in perfect working conditions to use in case of fire outbreak. 16 (15.5%) teachers were neutral and 15 (13.6%) teachers agreed they had fire extinguishers that are in working state. Majority of teachers therefore confirmed their schools do not have fire fighting preparedness. Having such preparedness is a control measure for fire hazards. Fire accidents lead to injuries that hinder teachers' mental and physical skills.

#### 4:4:3 fire fighting training and techniques

**Table 4:8 Teachers level of agreement on Fire fighting Training.**

Response	Frequency	Percentage %
Strongly disagree	58	56.3
Disagree	17	16.5
Neutral	2	3.0
Agree	0	
Strongly agree	0	
Total	77	74.8

The study finding from table 4:6 indicated that 75 (72.8%) teachers disagreed on having received fire fighting training and techniques in the preceding month before the survey. 2 (3%) teachers were neutral, This shows that teachers are not aware of what to do in case of fire

incidence either in class or in the offices. science teachers, whose work in the laboratory puts them at a higher risk of fire hazards were indeed concerned about this, one of them commented that “I avoid performing some experiments for fear of fire outbreak, and instead emphasize on theoretical explanations” a factor that he attributes to poor performance of questions set from that particular area of the curriculum.

#### 4:4:4 The availability of emergency doors

**Table 4:9: Teachers level of agreement on availability of emergency doors in offices and laboratories**

Response	Frequency	Percentage %
Strongly Disagree	32	31.1 %
Disagree	15	14.6 %
Neutral	14	13.6 %
Agree	14	13.6 %
Strongly Agree	2	1.9 %
Total	77	74.8

From table 4:9 the findings indicate that above, 46% of the respondents disagreed on having emergency doors in their offices and laboratories 14% were neutral, while 26% agreed. Those in agreement however, specified that, such doors did not open from outside. This poses a great danger of trapping victims inside a room in case there is fire, as there is always a tendency to crowd behind the door in attempt to escape.

#### 4:4:5 Safety from slips and falls

**Table 4.10: use of precautionary measures against slips and falls in their schools**

Response	Frequency	Percentage %
Strongly Disagree	24	23.3%
Disagree	8	7.8 %
Neutral	28	27.2 %
Agree	13	12.6%
Strongly Agree	4	3.9 %
Total	77	74.8 %

The findings indicate that Thirty one percent (31%) of teachers felt that the floors of their offices and the classrooms including the staircases are not kept dry enough to avoid slips and falls. Only seventeen percent (17%) were in agreement that indeed precautions are taken to protect them from slips and falls in their schools.

The respondents pointed that a number had suffered sprains from slips and although they never sought medical help they missed several lessons, following such incidences. These findings established that this resonated with the findings of the British health and safety executive, that slips and falls lead to injuries, cuts and abrasions which lead to absenteeism of workers.

#### 4:4:6 use of comfortable office furniture in schools

**Table4.11: use of comfortable office furniture in school**

Response	Frequency	Percentage %
Strongly Disagree	15	14.6 %
Disagree	25	24.3 %
Neutral	22	21.4 %
Agree	11	10.7 %
Strongly Agree	4	3.9 %
TOTAL	77	74.8 %

Results from table 4.11 indicate that 40 teachers 38.9% felt that the furniture they use in their offices and classrooms were not comfortable, especially when working for long hours. 22 teachers, 21.4 percent were neutral, 15 teachers 14.6 percent admitted their furniture was comfortable. This reveals that most teachers are exposed to ergonomic hazards, ( $\chi^2=0.261$  df4  $p<0.05$ ) indicate that indeed the two items are dependent indicating that use of poor furniture in schools is likely to cause low back pain among teachers which leads to absenteeism and presenteeism

#### **.4:5 Influence of occupational health on teachers performance**

The researcher wanted to establish whether occupational health hazards have any influence on public secondary school teachers' performance of duties. This section presents data findings on teachers' responses on occupational health in their respective schools, and the influence these have on the performance of their duties.

**Table 4:12 Analyses on the number of teachers trained on health issues**

Response	Frequency	Percentage %
yes	19	18.4 %
no	58	56.3 %
Total	77	74.8 %

Table 4.12 reveals that 56.3 percent of the interviewed teachers had not been trained on any health issues 18.4 percent had been trained, most of them on HIV/AIDS pandemic. The findings of the study are that none of the respondents had any information on health hazards related to their work. This implied that most of the teachers were in danger of passive exposure to work related health hazards. Further analysis indicated that 60% of the respondents had not received vaccination to protect them against infectious diseases; this can be attributed partly to laxity in receiving such vaccination and partly due to lack of information.

**Table 4.13 Analysis results on teachers' use of protective clothing when handling chemicals in school**

variable	frequency	Percent (%)
yes	10	9.7 %
No	26	25.2 %
Not applicable	41	39.8 %
total	77	74.8 %

Table 4.13 reveals that most teachers- who are required to wear protective clothing due to the subjects they teach do not wear them, only 9.7 %(10) teachers wore such clothing While 25.2%(26) teachers did not .This findings reveal that majority of the teachers are in danger of exposure to chemical hazards which include concentration of mists vapors gases and solids. These are associated with voice disorders, soreness and hoarseness which interfere with lesson delivery.

**4:5:2: Analyses results on the person in charge of health emergencies in the schools.**

**Table 4.14: Teachers response on handling of emergencies in the school**

Response	Number of teachers	Percentage %
School nurse	27	26.2 %
Colleague	31	30.1 %
Don't know	19	18.4 %
Total	77	74.8 %

The results from the table 4.14 above reveal that 26.2 percent of teachers agreed with having a school nurse to take care of health emergencies in their school 30 percent of the teachers revealed that such emergencies are handled by colleague teachers, regardless of the fact that most teachers are untrained in health issues. These findings reveal that teachers are exposed to chemical hazards and biological hazards such as infectious diseases which can inflict them in the course of administering first aid either to students or colleague teachers. Further Analysis

revealed that, most schools lacked a well equipped first aid box .indeed 47% of the teachers admitted to having no first aid kit in their schools only 18% agreed to have one which they admitted is not well equipped. There was a general lack of information on the contents of a first aid box and more so its location in the school.

**4:5:3 Analyses results on teachers dining areas.**

**Table 4.15**

variable	frequency	percentage %
staffroom	35	34.0 %
Dining area	19	18.4 %
others	23	22.3 %
total	77	74.8 %

From table 4.15 the results reveal that, majority of respondents 34.0 percent expressed that they take their meals in the staffroom, 22.3 percent stated other areas like computer laboratory, while 18.4 percent stated that they take meals from a dining hall. These findings indicated that most schools do not have dining facilities for teachers, this poses a danger of Biological hazards which include rodents, virus, bacteria which are attracted by food particles left behind especially when thorough cleaning is not done regularly. Some of respondents stated they sometime take snacks when they are in the laboratory, this does not only expose them to biological hazards but chemical hazards as well.

### **4:5:3 Analysis results on level of work- related stress among teachers**

**Table 4.16**

variable	frequency	percentage%
yes	55	53.4%
no	22	21.4 %
total	77	74.8 %

The findings from table 4.16 above reveal that majority of respondents 53.4 % suffered from work related stress in the preceding 30 days before the survey. 21.4 % expressed that they did not suffer from any work related stress in the preceding 30 days before the survey. Stress contributes to burnout and low motivation to work. Human errors made under the effect of occupational stress can reduce productivity in teachers. This trickles down to the students hence affecting their performance.

### **4.5.5 Analyses results on common ailments teachers suffered in the preceding 30 days before the survey and the percentages**

**Table 4.17**

variable	frequency	Percentage %
Neck pain	7	9.09
Chest pain	8	10.38
Itchy eyes	6	7.79
allergy	5	6.49
flu	9	11.68
Low back pain	4	5.19
Skin dermatitis	11	14.28
Anxiety	6	7.79
Heart burn	7	9.09
Voice disorder	14	18.18
total	77	74.8

The findings from Table 4.17 revealed that teachers suffered from work related ailments in the preceding 30 days before the interview. Only work related ailments were included for the figures shown.

#### 4:6: Analyses results on the influence of physical Environment on teachers performance

In this section the researcher wanted to establish whether there was any influence of physical environment on teachers' performance of duties. To achieve this objective the respondents were asked their opinions on physical environment in their schools and their responses were tabulated as shown below.

##### 4:6:2 Influence of noise on performance.

**Table 4.18: Analyses results on noise control in the staffroom and classrooms.**

Response	Frequency	Percentage %
Strongly Disagree	19	18.4 %
Disagree	14	13.6 %
Neutral	25	24.3 %
Agree	19	18.4 %
Strongly Agree	0	0 %
TOTAL	77	74.8 %

Results from table 4.18, indicates that 33 (32%) teachers found the noise levels in the staffroom uncomfortable to work in. 25 (24.3%) teachers, were Neutral, while 19 (18.4%) teachers indicated that noise in their staffrooms were controlled therefore not a hindrance to their performance. This indicated that majority of respondents did not work comfortably in their respective staffroom or offices and in classrooms due to noise hazard. Control of noise enhances concentration and proper utilization of time. Noise in classes can prevent communication through its interference with reception of speech. It can also cause ear damage. Noise control can encourage teachers to work in their offices when doing lesson preparation and when marking students work.



#### **4:6:3 Influence of lighting, on teachers performance.**

**Table 4:19: Analyses results on lighting in the classrooms and offices.**

Response	Frequency	Percentage %
Strongly Disagree	9	8.7
Disagree	16	15.5
Neutral	18	17.5
Agree	28	27.2
Strongly Agree	6	5.8
TOTAL	77	74.8

Findings indicate that 24.2 percent (25 teachers) agreed that, lighting in classrooms and offices are not conducive to work in, 17.5 percent (18 teachers) were neutral while 33 percent (34 teachers) agreed that lighting was conducive to work in. This can be attributed to the utilization of natural lighting in most schools through installation of many and wide windows to light up the rooms.

#### **4:7 Influence of social environment on teachers performance of duties**

In this section the researcher wanted to establish whether social environment in public secondary school teachers had any influence on their performance of duties. The respondents' responses were tabulated as follows.

**Table 4.20: shows results on management sensitivity to teachers concerns.**

Response	Frequency	Percentage %
Strongly Disagree	10	9.7 %
Disagree	29	28.2 %
Neutral	15	14.6 %
Agree	21	20.4 %
Strongly Agree	2	1.9 %
TOTAL	77	74.8 %

Results indicate that 39 teachers, (37.9 percent) felt the management staff in their school are not sensitive to teachers concerns, 15 teachers, (14.6 percent) were neutral, 23 teachers, (22.3 percent), felt the management staff listened to teachers concerns. This findings reveal that majority of the respondents felt the management was insensitive to their concerns.

#### **4.8: Analysis of Data on the study hypothesis**

In this study, the influence of each independent variable on the dependent variable was tested using the chi –square test. Any of the hypothesis was considered to be significant if the calculated chi- square statistic exceeds a critical value at alpha 0.05 level of significance and at appropriate degrees of freedom (Kelling 1993)

One of the objectives of the study was to find out whether there is any influence of occupational safety on teachers performance of duties in selected public secondary schools in Limuru District. To establish this a chi – square test of independence was used to test the hypothesis .

**HO1:** There is no significant relationship between occupational safety of teachers and their performance of duty in Limuru District.

The hypothesis was analyzed by assessing if there is a relationship between, clean air quality in offices and classrooms that is motivating to work, and safety and maintenance of the school buildings.

**Table 4:8:1 shows chi- square analysis on air quality in classrooms and offices and safety of school buildings.**

MEASURE	Clean air quality in office and classrooms that is motivating					
		SD	D	N	A	TOTAL
School buildings that are safe and well maintained	SD	4	2	0	1	7
	D	0	4	8	2	14
	N	7	4	8	2	21
	A	8	2	5	12	27
	SA	0	2	4	2	8
	TOTAL	19	14	25	19	77

Key:

SD: strongly disagree. D : Disagree A: Agree SA: Strongly agree

N=77

$\chi^2$  value (chi-square value) = 21.137

Degrees of freedom= 12

Critical value 0.007

$P < 0.05$

From the chi- square ( $X^2$ ) computation, the calculated value is 21.137, which is greater than the critical value of 0.007 at 5% confidence level and 12 degrees of freedom. In this case the judgment made was to reject the null hypothesis and accept the alternative hypothesis. There is therefore significant relationship between providing safe maintained school buildings, and teachers' motivation to work. The findings further imply that there is a significant relationship between occupational safety and teachers performance of duties in public secondary schools in Limuru District.

The other objective of the study is to find out whether there is any influence of occupational health on teachers performance of duties in public secondary schools in Limuru

District to establish this a chi – square ( $X^2$ ) test of independence was used to test the hypothesis.

**HO2:** There is no significant relationship between occupational health of teachers and their duty performance in Limuru District.

The hypothesis was analyzed to find if there was a relationship between sick leaves taken by teachers and work related stress.

**Table: 4.8.2 shows chi – square test analysis on teachers’ sick leaves and work related stress**

MEASURE	SICK LEAVE					
		No time off	Less than a day	1 – 3 days	3 – 6 days	Total
Occupational stress	YES	17	9	20	9	55
	NO	7	0	15	0	22
	TOTAL	24	9	35	9	77

$X^2$  (chi – square value) = 10.704

Critical value= 0.013

Degrees of freedom=3

$P < 0.05$

From the chi – square test computation the calculated value is 10.704 which is greater than the critical value of 0.013 at 5% confidence level and degrees of freedom . In this case the judgment made was to reject the null hypothesis and accept the alternative hypothesis. There is therefore a significant relationship between teachers’ sick leaves (absenteeism) and occupational stress. This findings further imply that, there is significant relationship between occupational health and teachers performance of duties in Limuru District.

The third objective was to test whether there is significant relationship between occupational environment and teachers performance of duties in Limuru District . The chi – square test was used to test the hypothesis:

**HO3:** There is no significant relationship between occupational environment and teachers' performance of duties in Limuru District.

The hypothesis was analyzed to find if there was a relationship between clear communication of decisions to all teachers and work related stress.

**Table 4.8.3: - Shows the chi – square test analysis on teachers' sick leaves and clear communication of decision to all teachers.**

MEASURE	SICK LEAVES					
		No time off	Less than 1 day	1 – 3days	3 – 6 days	TOTAL
Decision are clearly communicated to teachers	SD	5	2	19	0	26
	D	6	2	4	5	17
	N	6	4	5	2	17
	SA	7	1	7	2	17
	TOTAL	24	9	35	9	17

Pearson chi – square value = 19.607

Degrees of freedom = 9

Critical value= 0.21

$P < 0.05$

From the chi – square test computation the calculated value is 19.607 which is greater than critical value of 9 degrees of freedom . In this case the judgment made is to reject the null hypothesis and accept the alternative hypothesis. There is therefore significant relationship between occupational environment and teachers' performance of duties in Limuru District.

#### **4.9: Summary of the chapter**

Independent variables namely occupational hazards, physical health occupational hazards physical environment hazards and social environment hazards were analyzed using SPSS so as to identify their effect on the dependent variable –teachers performance of duties in limuru district in Kenya.

From the analysis, presentation and interpretation of the data collected, it is crucial to note that occupational safety, health and environment immensely contribute to the teachers' performance of duties in public secondary school in limuru district –Kenya. The researcher came up with occupational safety hazards, physical health occupational hazards, physical environment hazards and social environment hazards as pertinent factors that affect teachers' performance of duties in public secondary schools in limuru district. Therefore, the ministry of education should adapt this report to assist in setting up the relevant policies and procedures which will help correct the situation, so as to help them achieve set goals and objectives.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Introduction

This chapter presents the analysis of the data collected so as to make informed conclusions through interpretation and presentation. The overall objective of the researcher was to find out how occupational safety, occupational health and occupational environment influence teachers performance of duties. The researcher had four major objectives; to find out the influence of occupational safety, the influence of occupational health, the influence of physical environment and the influence of social environment. The findings have been analyzed above and the researcher comes up with the following summary of findings, conclusions and recommendations.

#### 5.2. Summary of the findings

The study sought to investigate the influence of occupational safety, health and environment on teachers' performance of duties. Chapter 4 Presents the results of the data collected and further discusses these findings. 77 (100%) respondents were interviewed. Out of these, 50.6% were male and 49.4% were female. 74.8% of them were trained in education course either at diploma level or degree and masters level. Education course is a basic requirement for all trained teachers. 25.2% of respondents were trained in Bachelor of science, which is also acceptable course in teaching, this indicates that all the responding teachers were qualified to teach in secondary school. Further analyses indicated that majority of them (93%), had teaching experience exceeding two years. This should translate to good performance, building on the premise that performance improve with experience.

The first objective of the study was to determine the relationship between occupational safety and teachers' performance of duties in public secondary schools in Limuru district. Data analysis and interpretation of responses from respondents revealed the following major findings under this objective.

### **5:2:1 influence of occupational safety hazards on teachers' performance.**

The data showed that, most school buildings in Limuru district are safe and well maintained, 54.4 percent of the interviewed teachers felt the building, were safe and well maintained for use by both teachers and students.. However 20.4 percent of the respondents felt the buildings were not safe in terms of structural designs.

Fire fighting tools like fire extinguishers, hose reel or hydrant were not available in most schools, 46 (44.7%) teachers disagreed with having a fire extinguisher in their schools. Out of 15 teachers who agreed with having a fire extinguisher, only 5 teachers knew the location of the gadget. Further analyses showed that where fire extinguishers were available they were either inadequate for all the buildings, or they are not accessible to teachers and most of them are out of order due to lack of regular servicing .

The survey also revealed that all the respondents did not know how to operate a fire extinguisher, including those from schools where such gadgets were available. These findings were further supported by self reports from respondents in which 75 (72.8 percent) teachers disagreed with receiving fire fighting training and safety including those teachers that taught science and computer subjects which require them to work in fire prone areas such as science and computer laboratories. Forty seven (46%) teachers strongly disagreed to having emergency doors in their offices and laboratories which opens from outside, to serve as a precautionary measure against suffocation in case of fire incident.

Electrical installation in the offices and classrooms in most schools were reported to be improperly located. 46 (44.7%) teachers disagreed that electrical wires are located properly in their respective schools and that there was no chance of accident from them. The responding teachers felt, precautions were not taken to ensure that, no accidents occurred from such installation for instance provision of enough sockets to avoid overloading.

On slips and falls the data analysis indicated that 60 (58.3%) teachers disagreed with having precautionary measures taken in their schools to prevent slips and falls, both in offices,



laboratories and classrooms. These findings were further supported by data that showed that most offices, laboratories and classrooms of the represented schools are not regularly cleaned to keep the floors dry and free from such dangers.

The survey also revealed that the furniture (tables and chairs) used by teachers in their offices and classrooms were unsuitable. 40 (48.9%) teachers disagreed with having comfortable furniture in offices and classrooms in their respective schools.

### **5:2:2: influence of occupational health hazards on teachers' performance of duties.**

Work related ailments have been associated with increased absenteeism among teachers, as outlined in the literature review of this study. **Table 4.12** shows the work – related ailments suffered by teachers in the preceding 30 days before the interview and the percentage of teachers who experienced such ailments. Only work – related complaints were included for the figures shown. From the survey, the duration of health complaints during the preceding 30 days among the sufferers was also investigated, 8 out of 9 single health complaints showed an average duration of seven days or longer. These findings indicated that teachers suffered from health problems in long term.

The average duration of anxiety was longest among the 9 health complaints. Anxiety is mostly associated with work related stress, which has been shown to be a result of heavy workload. Skin dermatitis ranked second. While itchy eyes ranked third. prolonged reading of teaching materials, assessing assignments or doing computer work, and insufficient sleep could be the cause of the itchy eyes due to eyestrain, while use of poor quality chalk could be the cause for the high rate of skin dermatitis.

The study also revealed that, most of teachers 56.3% were not trained on how to deal with health issues, including the need to receive vaccination against infectious diseases, despite the fact that their work involved interacting with people from different areas. Other findings indicate that most of them 56(54.4%) teachers did not wear protective clothing when handling chemicals at their schools. First aid box was also unavailable to most schools and so is the training to teachers on how to provide appropriate first aid.

laboratories and classrooms. These findings were further supported by data that showed that most offices, laboratories and classrooms of the represented schools are not regularly cleaned to keep the floors dry and free from such dangers.

The survey also revealed that the furniture (tables and chairs) used by teachers in their offices and classrooms were unsuitable. 40 (48.9%) teachers disagreed with having comfortable furniture in offices and classrooms in their respective schools.

### **5:2:2: influence of occupational health hazards on teachers' performance of duties.**

Work related ailments have been associated with increased absenteeism among teachers, as outlined in the literature review of this study. **Table 4.12** shows the work – related ailments suffered by teachers in the preceding 30 days before the interview and the percentage of teachers who experienced such ailments. Only work – related complaints were included for the figures shown. From the survey, the duration of health complaints during the preceding 30 days among the sufferers was also investigated, 8 out of 9 single health complaints showed an average duration of seven days or longer. These findings indicated that teachers suffered from health problems in long term.

The average duration of anxiety was longest among the 9 health complaints. Anxiety is mostly associated with work related stress, which has been shown to be a result of heavy workload. Skin dermatitis ranked second. While itchy eyes ranked third. prolonged reading of teaching materials, assessing assignments or doing computer work, and insufficient sleep could be the cause of the itchy eyes due to eyestrain, while use of poor quality chalk could be the cause for the high rate of skin dermatitis.

The study also revealed that, most of teachers 56.3% were not trained on how to deal with health issues, including the need to receive vaccination against infectious diseases, despite the fact that their work involved interacting with people from different areas. Other findings indicate that most of them 56(54.4%) teachers did not wear protective clothing when handling chemicals at their schools. First aid box was also unavailable to most schools and so is the training to teachers on how to provide appropriate first aid.

The study also revealed that most teachers handle health emergency cases in their respective schools, since most schools do not have qualified school nurses, this exposes teachers to both biological and chemical hazards since, they lack health training to cater for such cases.

Biological hazards have been cited in the study as causes of occupational health ailments among teachers. However from the survey fig 4.3 reveals that, 75% of the interviewed teachers took their meals in the staffroom and other areas. This can attract rodents like rats, bacteria, moulds and fungi, due to the food particles that may be left in these places especially if they are not regularly cleaned.

Regarding work – related stress, fig 4.4 indicate, that a large proportion of responding teachers in Limuru District reported suffering from work- related stress. This can be associated to heavy workloads

### **5:2:3: influence of occupational environment hazards on teachers performance of duties.**

From the study the responding teachers reported that social environment influenced their performance. Most of the teachers, 37.9 percent felt the management was insensitive to the teachers concerns. The study further revealed that decisions made in schools are not clearly communicated to all teachers. Other findings revealed that most of the responding teachers did not feel comfortable when interacting with their colleagues in their school especially those in management.

The physical environment has been cited in this study's literature review as influencing teachers' performance. This is in relation to factors such as acoustic levels, ventilation in building, proper housekeeping and thermal factors. From the survey, it was reported that noise levels in the staffroom were uncomfortable to work in, for most teachers, noise from human, increase if they work in limited space. This interferes with concentration and also proper time utilization. The survey further revealed that most teachers felt the premises they work in are not clean enough, which de motivating to work. sanitary fixtures like toilet, hand wash basin were reported not to be well maintained and were not enough for all teachers. by most Healthy drinking water was also not available to most of the respondents in their offices.

### 5.3 Discussion on findings

On occupational safety and teachers' performance, the study found it very wanting. Most of the schools were found lacking in the safety tools or the teachers were inadequately trained on fire fighting techniques. Electrical installations in most schools were improperly located posing a very high risk of accidents. The furniture used by teachers in most schools revealed that they are uncomfortable to use for long period of time therefore posing the danger of ergonomic related conditions to the user.

On occupational health, the researcher found that most teachers handle chemicals in their schools without protective clothing, this increases their exposure to chemical related hazards and ailments. The study findings also revealed that work related ailments kept teachers away from work for a period not less than three days. If the ailment was mild enough not to cause absenteeism it would then lead to presenteeism-this is reduced productivity at work because of health conditions this finding concurs with the findings of Hurlin (1991),he noted that absenteeism correlated  $-.21$  with organizational records of productivity and  $-.54$  with supervisory ratings of performance indicating that frequently absent workers are poor performers.

Training of teachers on occupational health issues such as administration of first aid , getting vaccinated against infectious diseases and taking meals and snacks in designated areas was found to be very low or lacking among the teachers in most cases. Schools were also found to be lacking in any reading material on occupational health or health in general.

On occupational environment the study findings revealed that congestion in most schools staffrooms contributed to noise pollution, therefore making working in such environments very difficult to most teachers.

On social environment the study findings were, that in most schools teachers were not involved in decision making in their respective schools. This hinders team work that would ensure that instructional staff and principals engage in collaborative scrutiny and discussion of students work, review student performance data and deliberate over their implications for good performance. The researcher also found that social conflict ranging from office quarrels clashes

squabbles and bad relationship were common among the teachers. The researcher concluded that if such conflicts can be avoided the teachers performance of duties could improve.

#### **5.4. Conclusions**

The study intended to investigate the influence of occupational safety, health and environment on teachers' performance of duties in public secondary schools in Limuru District. this was in relation to the fact that public secondary schools in the district continue to register low performance , despite use of various interventions by relevant stakeholders. The study specifically sought to know the influence of occupational safety hazards , occupational health hazards and occupational environment hazards on teachers performance of duties.

The study established that teachers in public secondary schools in Limuru district are professionally trained with quite a large number of them attaining a Masters degree. They are also highly experienced in teaching with majority having over five years of teaching experience. In view of these findings, the study concludes that teachers had the necessary knowledge and skills to carry out tasks assigned to them. However, to effectively do this they needed to be accorded occupational safety.

The study established that teachers worked in congested offices despite that, offices are fundamental workplace which accommodates information gathering and knowledge processing activities. Results also revealed that the same offices lacked comfortable furniture, suitable for the work being done and the users. This caused the teachers to experience ergonomic related ailments such as musculoskeletal pain and neck pains. The study also established that some buildings in some schools were unsafe for teachers and students in terms of structural designs and space. Results from Chi-square computation indicated that the condition of school buildings is a significant factor in the successful delivery of the curriculum. This resonated well with other researchers' findings that buildings have significant effect on working behavior of inhabitants.

The study further established that teachers lacked training in fire fighting techniques, most schools, consequently lacked fire fighting preparedness which was clearly shown, by lack of fire

nting tools like fire extinguishers and horse reel. Fire control measures were found to be ssing in most schools. Such measures include: fire alarms and emergency doors in offices, ssrooms and laboratories. Electricity installations too, were not regularly inspected by trained cticians and in most schools, offices lacked adequate electric sockets equivalent to electrical oliances in use, therefore posing the danger of fire through overloading.

ps and falls were found to be major hazards for teachers. Most schools had not taken cautionary measures to prevent accidents from them. Many teachers' self- reports indicated t such accidents kept them from attending lessons if they happened. In view of these findings study concludes that occupational safety influenced public secondary school teacher's formance of duties in Limuru district.

e other study question sought to establish whether occupational health influenced public onday school teachers, performance of duties. The findings from the survey established the owing in relation to this question: teachers were inadequately trained to handle health issues he schools. They lacked information on safe administration of first aid, despite being trusted with administering the same to their colleagues and students. Further revelations icated that, teachers did not use protective clothing when handling chemical and this exposed m to chemical hazards. Lack of proper dining areas, and working in unclean offices and ssrooms, further indicated that teachers are exposed to biological hazards and are likely to fer the consequent dangers.

e study also established that most of the teachers suffered from common work- related nents, which contributed highly to both absenteeism and presenteeism. In cases where the nment was severe, the teachers absented themselves for a duration exceeding three days. In er cases when the ailment was mild teachers resulted to presenteeism. Presenteeism reflects the enomenon of loss of work productivity in terms of the quantity and quality of work done due llness or injury, it occurred when teachers went to work when feeling unwell. This was also a y as it could lead to the spreading of the sickness such as flu which is highly infectious and o increasing the period of the sickness, which lowers productivity. The study also established t many teachers had not received vaccinations against infectious diseases despite being posed to people from different areas

Other revelations are the fact that, most teachers suffered from work related stress. The study, based on these findings, therefore concludes that occupational health influenced public secondary school teachers, performance of duties in Limuru district.

The study also sought to establish whether occupational environment influenced teachers' performance. Results from the study established that, lighting systems in most schools supported the tasks teachers were doing in offices and classrooms, Acoustic hazards were however found to dominate most offices probably due to congestion. This can lower motivation and job satisfaction. Noise was seen to prevent voice communication and also contributed to improper utilization of time. Air quality in offices and classrooms was found to be uncomfortable by most teachers due to inadequate ventilation.

The study further established that welfare arrangements which included provision of drinking water and facilities for rest and eating meals, proportional to size of workforce, were not available to most of the teachers. Sanitary fixtures like hand wash basins, soap and hand drying materials were not available for teachers use in many schools hence posing the danger of spreading germs. Though the physical facilities, in and of itself, do not act as a motivator. The researcher believes, it is a prerequisite basic satisfaction which can be explained by Fredrick Herzberg's Hygiene needs, in Herzberg's two factor theory of motivation

Further revelation by the study established that, majority of the teachers did not cope well with their colleagues especially those in management. Most of the teachers felt, management was insensitive to their concerns. Communication too, was not clearly done, since most decisions were not communicated to teachers and if they were not on time. The study also found that teachers in some schools were not involved in decision making in the schools. In view of these findings, the study therefore concludes that teachers' performance in public secondary schools in limuru district was influenced by their occupational environment

## 5:5: Recommendations

I have urged in this document that occupational safety, health and environment influence teachers performance of duties. The study has also shown that these factors have an influence on teachers' performance of duties in public secondary schools in Limuru district. It is against this background that the recommendations below are made.

Despite its limitations, this study should provide important information to education policy makers and future researchers interested in curriculum implementation.

Based on the findings of the study, i recommend that teachers be provided with comfortable furniture in their schools, which will encourage proper time utilization, reduce ergonomic related ailments that keep them away from schools and also reduce injuries that lead to absenteeism

With regard to occupational health, It is recommended that teachers wear protective clothing's when handling chemicals to avoid ailments related to such exposure. The schools should ensure that there are facilities for rest and eating meals for teachers, as this will ensure reduction in exposure to both chemical and biological hazards.

Teachers ought to be vaccinated against common infectious diseases since their work involves interacting with people from different area who can be sources of diseases some of which leads to absenteeism. They should also be trained in various health issues including administering of first aid, control of occupational hazards and risks among others, if they have to promote safety and health in their institutions. There is need for the government to employ more teachers to reduce workloads in schools, since this has been cited as a cause for work related stress and burnout among teachers.

Finally there is need to provide a good occupational environment for teachers by ensuring unnecessary noise is controlled in and around the school buildings. Such buildings should also be well ventilated, and proper Housekeeping maintained. Proper records regarding accidents and injuries met and suffered by teachers, and their causes should be kept in schools to provide information to teachers, as well as serving as measures to control reoccurrence of similar incidences.

Proper lines of communication should be established in schools, to ensure decisions are clearly communicated to teachers by those in management.



It is also important to involve all teachers in decision making in schools as the benefits of doing this outweigh the related costs and repacations; as revealed in the study.

### **5:6 Suggestions for further research**

The study recommends further research on the influence of occupational safety, health and environment on performance of teachers in private schools in the same district. The study also recommends Replication of a similar research but in different District.

## REFERENCES

- Abraham ,Frances. (1982). *Modern sociological theory: an introduction*:N Delhi, university press
- Best, K. and Khan, J .(1989) *Research in Education 3<sup>rd</sup> edition* Ma Jersey: Prentice- Hall
- Bon, M. and Ann, S. M. (1995) *Teaching and learning in secondary schools*. prentice-hall inc
- Bowers, T. (2001) *Teachers absenteeism and health retirement: Cambridge Journal of education Vol 31 Issue 2.*
- Charles, D. R.(2009) *Occupational health and safety management*. Prentice- Hall Inc.
- Chris, M. Mark, S. (1997). *The scientific Literature on teachers' health*: Journal of technology and education, Vol 19 Issue 2 pg. k21.
- Dave, K. Verma, C.Demers, and .Shaw, E. (2010). *Occupational health and safety issues in outorio sawmills and vency plywood plants. A pilot study*. Journal on environmental and public health Vol 2010, Article Id 526487.
- David, M. (2005) *Health psychology Theory. Research and practice 2<sup>nd</sup> edition*.
- Dooley, D. (2007) *Social Research methods 4th edition* ; India prentice-hall private limited
- Fleer, P. and Gauther, E. (2010) *Ergonomics: A commonsense activity that can save schools money*. International Journal of education Vol 130 , Issue 4 Pg. 674-675
- Gay L.N. (1992) *Educational research* :New york. Macmillan publishing company.
- Guglucmi, R. & Tatrow, K. (1998) *Occupational stress, burn out and health in teachers. A methodological and Theoretical Analysis*: Review of educational research Journal Vol 68, Pg 61-99

Hess, F.(2004) *Teacher quality, teacher pay*: Journal of policy review issue 124 pp 345-346.

*I.L.O (2001) Guidelines on occupational safety and health management systems* ILO-OSH (Geneva international labor office)

James, S. A. (1995) *Occupational safety and health in the emergency services 2<sup>nd</sup> edition*.

James, T. (2009). *Health care hazard control and safety management, 2<sup>nd</sup> edition*.

Janice, N. (1999). Employment law for business students pg 333

Jing, S. and Mehta, A. (2010). *The chronic lung function decline on cotton textile workers: Roles of historical and recent<sup>s</sup> exposures to endotoxin*: Journal for environmental health perspectives Vol. 118 Issue 11 pg 1620-1624

John, A. L. (1995). *Occupational health and safety for school counselors AGCA paper*

Julie, W. (2002). *Learning the hard way: The poor environment of Americas schools*: Journal on environmental health perspectives Vol 110, pg 161.

Kasomo, D. (2006). *Research methods in Humanities and education*, Kenya. Egerton University Press,

Kerlinger, F.N (1983). *Foundation of behavioural research (second edition)*. New York: Holt, Reinhart and Winston

Kothari, C.R (2004) *Research methodology methods and techniques*, New Delhi new age. International (p) ltd.

- Logad, D. and Cetanese, S. (2007). *Chronic pain in the classroom: teachers attributions about causes of chronic pain*. Journal of school health Vol 77, Issue 5. Pg78-
- Marita, M. : *Health and safety hazards in schools environment: Bibliographies in education*. No. 81.
- Mark, B. and Peter, C. (1986). *Education and society in Africa*.: New york Hutchinson & Co. Ltd.
- Marshalls, C. and Rossman, G. (eds) 2006. *Designing qualitative research*.: California sage publications.
- Mugenda, O. and Mugenda, A. (2003). *Research methods quantitative and qualitative approaches*, Nairobi, Acts press.
- Murray ,L. Rae, (2010). *Now is the time to strengthen our occupational health protections*: Journal of Nation's health Vol. 41 Issue 3 Pg 3-3
- Myburgh ,C .and Poggenpoel, M. (2008). *Teachers experience of their school environmental implications for health promotion*. Education winter Vol. 123, Issue 2.
- Niliama, N. Donge. (2010). *Biochemical effects of occupational lead exposure to workers in small scale Automobile workshops*. Journal of environmental health research Vol 10 Issue 01 pg103
- Orodho, A.J & Kombo, D.K (2002) *Research methods* .Nairobi Kenyatta university institute of open learning.
- Orodho, A..J (2003) *Essential of educational and social sciences Research method*, Nairobi masola publishers
- Phil, H. & Ferret E.D. (2003). *Introduction to health and safety at work 2<sup>nd</sup> edition* U S A Elsevier Ltd,

*Public Health reports* Vol 24 (supp 1): 2009 pg 74-83

Saaranen, T. (2005). *School staff members and occupational health nurses: Evaluation of the promotion of occupational well being a good planning to better practice*: *Journal of inter professional care* Vol 19 Issue 5.

Sarah, L. J. (2009). Improving the school violence. A review of the literature: *Journal of school health* Vol 79 issue 10 pg 451-465

Shendel, D. and Hemminger (2009). *Supervising structured teaching experiences for students in school based occupational health*: *Health reports supplement 1* Vol 124.

Shirley, L. Bull, and Jonathan E. (1987). *Classroom management: Principles and practices.*: USA Elsevier ltd

Silver, S. and Whelan, E. (2009). *Occupational exposure to polychlorinated Biphenyls and risk of breast cancer*. *Environmental health perspectives* Vol 117, Issue 2 pg 276-282.

Singleton, R.A (1993) *Approach to social research.*. New York.UOP

## APPENDICES

### APPENDIX 1—TEACHERS QUESTIONNAIRE

#### DATA GATHERING QUESTIONNAIRE FOR RESEARCH ON THE INFLUENCE OF OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT ON TEACHERS PERFORMANCE OF DUTIES

To be completed by teachers

#### INFORMED CONSENT

This questionnaire is for use in gathering data for the purpose of an academic research and full confidentiality will be maintained. It is my hope that the recommendations that will arise out of the research findings will assist in the reduction of employees' accidents and the improvement of working conditions in workplaces.

Responses and completion of the questionnaire is purely voluntary. Your participation in completing the questionnaire will be highly appreciated.

Please kindly respond to the following questions.

#### PART 1

1 Occupational characteristic of respondents

2 What is your gender?

A) Male  B) female

3 Teacher training

Trained  Untrained

4 Highest professional training attained

A) D.ed  B) B.ed  C) M.ed  D) any other, specify.....

5 Teaching experience (tick (√) where applicable)

Less than 1 year  1 – 5 years  6 – 10 years  10 – 15 years

More than fifteen years

6 Category of the school you teach

Boys only  Girls only  mixed school  others

7 Which subjects do you teach? Please specify \_\_\_\_\_

8 How many other teachers teach the subject with you in the school? Please specify the number--  
-----

9 Are you a member of discipline or guidance team?

Yes  b) No  Please specify which.....

10 Position held in the school (tick √ where appropriate)

Principal  Deputy Principal  Head of department

Dean of studies  Games master/mistress  Class teacher

Others, please specify

## PART 2

### SECTION (A)

#### Occupational Health

1 Have you ever been trained on health issues?

Yes  b) No

If the answer is yes, which issues? Please specify \_\_\_\_\_

2 have you ever been vaccinated against infectious diseases -----

3 Do you wear protective clothing when using chemicals in the school?

Yes  b) No  c) not applicable ( )

4 Who takes care of health emergencies in the school? Please tick where appropriate)

a) School nurse  b) Colleague teacher  c) Don't know

5 Do you have a first aid box in the school?

Yes  b) No  c) I don't know

6 If the answer above is yes, where is it kept? Please specify. \_\_\_\_\_

7 Where do you take your meals in school? Please specify the area-----

8 Do you suffer from work-related stress?

Yes  No

9 The stress that you mentioned in the last question mainly comes from? (Tick all that apply)

a) Heavy workload  b) Guidance work  c) Getting along with colleagues

d) Lack of enough time to cover the syllabus  others, specify-----

10 In the last 12 months, how many days of sick leave have you taken due to work-related health problems?

a) No time off work  b) less than 1 day  c) 1 - 3 days

d) 3- 6

**Q 11** during the last 30 days, did you suffer from the following health problems or illnesses? Please tick (✓) the appropriate boxes to indicate the severity as well as the cause and fill in the last column to indicate the duration (0-30 days) of the corresponding health problem or illness (during the last 30 days)



Ordinary health problems and complains (please tick the appropriate box)	<u>SEVERITY</u>				<u>Cause</u>		Duration of health problems (0-30 days)
	Not at all	A little	Some	Serious	Yes	No	
Neck pain							
Low back pain							
Anxiety							
heartburns							
Voice hoarseness							
skin dermatitis -due to use of chalk.							
allergy							
joint pains							
Flu							
Itchy eyes							

Others, specify-----

SECTION B

**Occupational safety**

Q12

Please provide your opinions for the following statements. Your response to the statement will be based on a 5 – point scale ranging from ‘1’ to ‘5’. Your response can be any number between 1 & 5 depending on how much you agree with the statement. The more you agree the higher the score. Please bear in mind that there are no right or wrong answers.

- The scale mean
- 1 strongly disagree
  - 2 Disagree
  - 3 Neutral
  - 4 Agree
  - 5 Strongly agree

	1	2	3	4	5	0
the school buildings are safe and well maintained						
there is ample number of fire extinguishers in the school and all of them are in working condition						
fire drills take place once in every month						
everyone in the school is aware of do's and do not's case of an emergency						
the floors especially the staircase are always kept clean to avoid slips & falls						

The electrical wires are located in the proper way and there is no chance of accident from them						
There are emergency doors opening from outside, in the offices & laboratories						

SECTION C

Q 13: PHYSICAL ENVIRONMENT

	1	2	3	4	5	0
I find the level of temperature in my office comfortable to work in						
I find the level of air quality in the office and classroom very clean and motivating to work						
I find the noise levels in the staffroom well controlled.						
I find the lighting of the classrooms and office to be excellent when I am working.						
I find the external physical appearance of the school very appearing						
Sanitary fixtures (toilets, hand wash basin) in the school are very well maintained and enough for all.						

SOCIAL ENVIRONMENT

Q 14 SECTIONS D)

Decision are clearly communicated to all teachers						
I find the management sensitive to the teachers concerns.						
I am comfortable when interacting with colleagues in the school, including those in management.						

Q 15 The questionnaire was completed by

Self

b) With the assistance of the researcher

END OF INTERVIEW

I wish to thank you sincerely for your cooperation and valuable input in completing the above questionnaire.