ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 6, Issue, 05, pp.6602-6609, May, 2014

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

FACTORS THAT INFLUENCE IMPLEMENTATION OF OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT SYSTEM AT PUBLIC UNIVERSITIES IN KENYA-A CASE STUDY OF EGERTON UNIVERSITY

***David K. Njeru**

Department of Community Health, Faculty of Health Sciences, Egerton University in Kenya P.O Box 536 Egerton

ARTICLE INFO

Article History:
Received 09th January, 2014
Received in revised form
04th February, 2014
Accepted 15th April, 2014
Published online 20th May, 2014

Key words:
Occupational Health,
Worker,
Work Policy,
Funding,
Safety,
Legal compliance.

ABSTRACT

Despite the increasing level of interest in Occupational Safety and Health Management Systems (OSHMS), there have been few formal evaluation studies published. There is a relative paucity of information about how these systems work and how effective they are in preventing occupational injury and diseases. A general observation shows that hazards are present at work places in universities despite existence of overwhelming information on the importance of occupational safety and health management system (OSHMS). An Occupational Safety and Health Management System is a planned, documented and verifiable tool for managing hazards and their associated risks. The effectiveness of an OSHMS, and its ability to adapt and improve, hinges on how well its performance can be evaluated. The purpose of this study was to evaluate the factors that influence implementation of OSHMS at public universities in Kenya. OSHMS was developed in response to widespread demand for a recognized standard against which to be assessed and certified. This study was conducted at Egerton University's four campuses within Nakuru. The method of study was a case study descriptive survey research design. Data was collected using; observation check lists, structured interview schedules and questionnaires. Findings obtained showed that the factors affecting implementation of OSHMS included; lack of initial review of hazards (10%), inefficient development of systems (25%), failure to formulate OSH Objectives (30%) and inadequate hazard prevention mechanism(30).Data were analysed qualitatively using content analysis and also statistical package for social science (SPSS) version 16 computer program.The study recommended that an OSH policy be developed and implemented, participation of workers be encouraged, collaborative and support from the government be promoted and a system for continual improvement be designed.

INTRODUCTION

An Occupational Safety and Health and Management System (OSHMS) is a set of plans, actions and procedures that guide nations and organization to systematically manage safety and health risks associated with their business (ILO-OSH, 2001). The objectives of occupational safety and health are to ensure that the workplaces are safe to operate in and that the operations do not impact negatively on the workers. The overall aim of an OSHMS is to continuously improve occupational safety and health (OSH) performance through the effective management of OSH risks and activities in the workplace (Marsh, 2009). It provides a framework that allows organizations to consistently identify and control their occupational safety and health risks, reduce the potential for accidents, aid legislative compliance and improve overall performance of occupational safety and health management system (ILO, 2009). Occupational safety and health management system includes provisions for systematic identification, evaluation and prevention or control of hazards and goes beyond specified requirements of the law to address all hazards. (OSHA, 2007). An effective OHSMS promotes consultation in the workplace and engages employees and other stakeholders in safety and health processes and issues. This leads to the proactive management of safety and health concerns (Marsh, 2009) The elements for occupational safety and health management systems include; Formulation of safety and health policy in line with the national laws; organization which involves the safety and health committee and other workers of an organization; planning and implementation, monitoring and evaluation and action for continuous improvement (ILO-OSH 2001). In order to effectively achieve results, organizations ensures that; There is senior management commitment and employee involvement; Worksite analysis; Hazard prevention and control and safety and training (OSHA, 2007). Whereas a number of countries across the world are enacting legislative laws on occupational safety and health, many are yet to come up with these laws especially in the developing countries (ILO-2001). In Kenya, the situation can be divided into two main sector; public/government and the private sector. In both, the occupational safety and health is

Corresponding author: David K. Njeru
Department of Community Health, Faculty of Health Sciences,Egerton University in Kenya P.O Box 536 Egerton

established by ministry of labor and carried out by the directorate of occupational safety and health (Sakari, 1998) An act of parliament was passed in 2007 and became popularly known as OSHA, 2007. OSHA 2007 serves as a benchmark for managing workplace hazards. The Act provides the bare minimum in all matters pertaining to workplace safety and health including administration, enforcement of the law, and registration of work places. The sections that guide university management as employers directly are; the health general provisions, machinery safety, general safety provisions, chemical safety, welfare general provisions and health, safety and welfare special provisions (OSHA, 2007) Strategies and solutions need to be developed and applied both for well-known hazards and risks such as those arising from dangerous substances, machinery, tools and manual handling. The emerging issues, such as biological hazards, psychosocial hazards and musculo-skeletal disorders need to be addressed (strategy of occupational Health and safety conference 2004). In addition, as OSH is an intrinsic part of social relations it is affected by the same forces of change that prevail in national and global socio-economic contexts (Lehtineneds, 2011). Reports from the First International Conference on Health and Safety (2004) concluded that an OHSMS will not make a difference unless it reflects an overall positive approach to management by the principals of organizations. An OHSMS is only part of the company or organization's management system. (ILO, 2010) The system is intended to help organizations to control occupational safety and health hazards. The system was developed in response to widespread demand for a recognized standard against which to be certified and assessed. (Michael & Merson 2006) Any OHS management system must link business processes in order to effectively manage and continually improve operations. The OHS management systems becomes the framework in which program activity is planned, implemented, evaluated, improved, documented and verified. Thus the proper flow of information is the "life blood" of any organization (Reports from the first international conference on OSH, 2004).

Elements of Occupational Safety and Health Management Systems

Occupational Safety and Health Policy

The Safety and Health (S&H) policy is a declaration of the intention of the company or organization to safeguard the safety and health of employees, customers, and suppliers/contractors. (Awwad 2001) The employer, in consultation with workers and their representatives, sets out in writing an OSH policy, which is; specific to the organization and appropriate to its size and the nature of its activities; Concise, clearly written, dated and made effective by the signature or endorsement of the employer or the most senior accountable person in the organization. The policy statement on safety and health is communicated and readily accessible to all persons at their place of work, reviewed for continuing suitability, and made available to relevant external interested parties, as appropriate. (ILO-OSH, 2001).

Worker participation, organization and communication

Another important component of OSHMS is worker participation. According to OSHA 2007, employer is tasked with the duty to ensure that workers and their safety and health representatives are consulted, informed and trained on all aspects of OSH, including emergency arrangements, associated with their work. The law (OSHA 2007) further directs that the employer makes arrangements for workers and their safety and health representatives to have the time and resources to update themselves about processes of organizing, planning, implementation, evaluation and action for improvement of the OSH management system. The employer is supposed to ensure, as appropriate, the establishment and efficient functioning of a safety and health committee and the recognition of workers' safety and health representatives, in accordance with national laws and practice. (Lehtineneds, 2011) The employer has the overall responsibility for the protection of workers' safety and health, and provides or assigns leadership for OSH activities in the organization (ILO-OSH 2001). The employer and senior management allocates responsibility, accountability and authority for the development, implementation and performance of the OSH management system and the achievement of the relevant OSH objectives. According to the size and nature of activity of the organization, OSH management systems documentation establishes and may cover; The OSH policy and objectives of the organization, the allocated key OSH management roles and responsibilities for the implementation of the OSH management systems, the significant OSH hazards arising from the organization's activities, and the arrangements for their prevention and control, arrangements, procedures, instructions or other internal documents used within the framework of the OSH management system. (Marsh, 2009). The OSH management systems documentation should be: Clearly written and presented in a way that is understood by those who have to use it and periodically reviewed, revised as necessary, communicated and readily accessible to all appropriate or affected members of the organization (Armstrong, 2001). Arrangements and procedures are established and maintained for: receiving, documenting and responding appropriately to internal and external communications related to OSH, ensuring the internal communication of OSH information between relevant levels and functions of the organization, ensuring that the concerns, ideas and inputs of workers and their representatives on OSH matters are received, considered and responded to (ILO-OSH, 2001).

Planning and implementation

The purpose of planning is to create an OSH management system that supports as the minimum, compliance with national laws and regulations, the elements of the organization's OSH management systems and continual improvement in OSH performance (ILO-OSH, 2001). The organization's existing OSH management system and relevant arrangements is evaluated by an initial review, as appropriate. In the case there is no OSH management system in place no or if the organization is newly established, the initial review serves as a basis for establishing an OSH management system.

According to OSHA 2007, the initial review is carried out by competent persons, in consultation with workers and/or their representatives, as appropriate. It identifies the current applicable national laws and regulations, national guidelines, tailored guidelines, voluntary programmes and other requirements to which the organization subscribes. Planning and implementation programme further identifies, anticipates and assess hazards and risks of safety and health arising from the existing or proposed work environment and work organization. It also endeavors to determine whether planned or existing controls are adequate to eliminate hazards or control risks, analyze the data provided from workers' health surveillance. This include a clear definition, priority setting and quantification, where appropriate, of the organization's OSH objectives, the preparation of a plan for achieving each objective, with defined responsibility and clear performance criteria indicating what is to be done by whom and when. It also selects of measurement criteria for confirming that the objectives are achieved in addition to the provision of adequate resources including human and financial resources and technical support, as appropriate. The OSH planning arrangements of the organization covers the development and implementation of all the OSH management system elements, (ILO-OSH, 2001)

Hazard prevention and management of change

Hazards and risks to workers' safety and health are identified and assessed on an ongoing basis. Preventive and protective measures are implemented in the following order of priority. Eliminate the hazard at the source which is achieved at the design stage through engineering controls; Control the hazard at source, through the use of engineering controls or organizational measures; minimize the hazard by the design of safe work systems, which include administrative control measures; Where residual hazards cannot be controlled by collective measures, the employer provides for appropriate personal protective equipment, including clothing, at no cost, and implement measures to ensure its use and maintenance. (Marsh, 2009) Hazard prevention and control procedures or arrangements are established and are adapted to the hazards and risks encountered by the organization; be reviewed and modified if necessary on a regular basis; comply with national laws and regulations, and considers the current state of knowledge, including information or reports from organizations, such as labour inspectorates, occupational safety and health services, and other services as appropriate. (1LO-OSH, 2001) The impact on OSH of internal changes (such as those in staffing or due to new processes, working procedures, organizational structures or acquisitions) and of external changes (for example, as a result of amendments of national laws and regulations, organizational mergers, and developments in OSH knowledge and technology should be evaluated and appropriate preventive steps taken prior to the introduction of changes (Proceedings of international conference, OSH 2004) A workplace hazard identification and risk assessment are carried out before any modification or introduction of new work methods, materials, processes or machinery (Marsh 2009). Such assessments are done in consultation with and involving workers and their representatives, and the safety and health committee, where appropriate. The implementation of a "decision to change" ensures that all affected members of the organization are properly informed and trained in Emergency prevention, preparedness and response, Emergency prevention, preparedness and response. These arrangements identify the potential for accidents and emergency situations, and address the prevention of OSH risks associated with them. The arrangements are made according to the size and nature of activity of the organization by; ensuring that the necessary information, internal communication and coordination are provided to protect all people in the event of an emergency at the worksite; providing information to, and communication with, the relevant competent authorities, and the neighborhood and emergency response services; addressing first-aid and medical assistance, firefighting and evacuation of all people at the worksite; providing relevant information and training to all members of the organization, at all levels, including regular exercises in emergency prevention, preparedness and response procedures Emergency prevention, preparedness and response arrangements are established in cooperation with external emergency services and other bodies where applicable. (Ministry of special programs, 2009)

Monitoring, Evaluation and internal audit

Procedures to monitor, measure and record OSH performance on a regular basis is developed, established and periodically reviewed. Responsibility, accountability and authority for monitoring at different levels in the management structure are allocated. The selection of performance indicators are based according to the size and nature of activity of the organization and the OSH objectives (ILO, 2004). Both qualitative and quantitative measures appropriate to the needs of the organization are considered. These are based on the organization's identified hazards and risks, the commitments in the OSH policy and the OSH objectives; support the organization's evaluation process, including the management review. Performance monitoring and measurement are used as a means of determining the extent to which OSH policy and objectives are being implemented and risks are controlled and include both active and reactive monitoring, and not be based only upon work related injury, ill health, disease and incident statistics and be recorded (Lehtinen, 2011) Monitoring provides a feedback on OSH performance; information to determine whether the day-to-day arrangements for hazard and risk identification, prevention and control are in place and operating effectively; and the basis for decisions about improvement in hazard identification and risk control, and the OSH management system. Active monitoring contains the elements necessary to have a proactive system and includes: monitoring of the achievement of specific plans, established performance criteria; the systematic inspection of work systems, premises, plant and equipment and surveillance of the working environment, including work organization; surveillance of workers' health, where appropriate, through suitable medical monitoring or follow-up of workers for early detection of signs and symptoms of harm to health in order to determine the effectiveness of prevention and control measures and compliance with applicable national laws and regulations, collective agreements and other commitments on OSH to which the organization subscribes. (ILO-OSH, 2001)

Arrangements to conduct periodic audits are to be established in order to determine whether the OSH management system and its elements are in place, adequate, and effective in protecting the safety and health of workers and preventing incidents. An audit policy and programme is developed, and includes a designation of auditor competency, the audit scope, and the frequency of audits, audit methodology and reporting. The audit includes an evaluation of the organization's OSH management system elements or a subset of these, as appropriate. The audit should cover: The audit conclusion should determine whether the implemented OSH management system elements or a subset of these: are effective in meeting the organization's OSH policy and objectives; are effective in promoting full worker participation; respond to the results of OSH performance evaluation and previous audits; enable the organization to achieve compliance with relevant national laws and regulations; fulfill the goals of continual improvement and best OSH practice (Armstrong, M.2001)Audits are conducted by competent persons internal or external to the organization who are independent of the activity being audited. The audit results and audit conclusions should be communicated to those responsible for corrective action. Consultation on selection of the auditor and all stages of the workplace audit, including analysis of results, are subject to worker participation, as appropriate (Lehtineneds, 2010)

Action for improvement

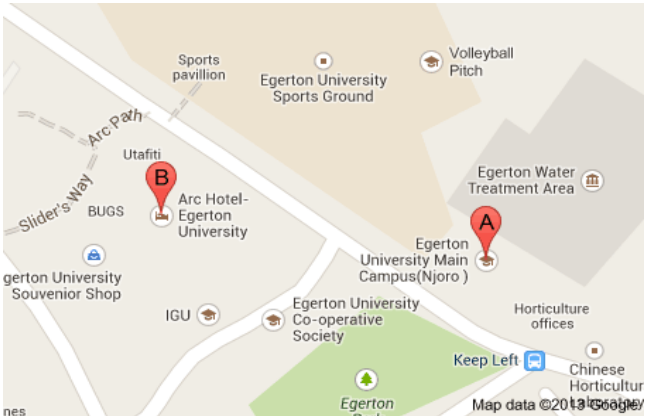
Arrangements are established and maintained for preventive and corrective action resulting from OSH management system performance monitoring and measurement, OSH management system audits and management reviews. These arrangements should include identifying and analyzing the root causes of any non-conformity with relevant OSH regulations and/or OSH management systems arrangements; and Initiating, planning, implementing, checking the effectiveness of and documenting corrective and preventive action, including changes to the OSH management system itself (ILO-OSH, 2001). When the evaluation of the OSH management system or other sources show that preventive and protective measure for hazards and risks are inadequate or likely to become inadequate, the measures should be addressed according to the recognized hierarchy of prevention and control measures, and completed and documented, as appropriate and in a timely manner (OSHA, 2007)

Continual improvement

Arrangements are established and maintained for continual improvement of the relevant elements of the OSH management system and the system as a whole. These arrangements take into account: the OSH objectives of the organization the results of hazard and risk identifications and assessments; the results of performance monitoring and measurements; the investigation of work-related injuries, diseases, ill health and incidents, and the results and recommendations of audits; the outcomes of the management review; the recommendations for improvement from all members of the organization, including the safety and health committee, where it exists; changes in national laws and regulations, voluntary programmes. (ILO-OSH 2001) Selection of suitable OHSMS standard or guideline is dependent on the university structure and its present OHS work (ILO-2001). Existing OHS works of Universities have capability to fulfill few OHSMS requirements defined in several standards and guidelines which is positive sign for possibilities of OHSMS implementation at Universities. Healthier and safer working environment is always appreciated. The implementation of OHSMS is done in a sequential manner (African Newsletter on OSH 2009).

MATERIALS AND METHODS

The study adopted a descriptive case study method owing to its strength of in-depth investigative trends in many science disciplines. a case study is an in depth study of a particular situation rather than a sweeping statistical survey. It is a method used to narrow down a very broad field of research into one easily researchable topic. The case study research design is also useful for testing whether scientific theories and models actually work in the real world.



Map of Egerton university campuses

Population of Study

The study targeted Egerton university community including; the management, teaching and non-teaching staff (both on full time and contract terms of employment). Egerton University has a population of about 1832 workers (HR Department, 2012). The University has, teaching departments, income generating departments and service departments. The activities within these departments differ greatly and hence the sources and nature of hazards are different. The classroom teaching for instance has different sources and types of hazards as compared to office work, procurement, dairy departments and laboratory based departments. The exposure to workplace hazard is therefore different for different group of workers.

Sampling Procedure and Sample Size Determination

In order to achieve accurate results, each university campus was allocated a representative proportion of the sample size as shown in the table below.

Sample size calculation

The sample size was calculated using Fischer's method

Table 1. Sample Size per Campus

	Name of campus	Population of workers	Sample size	Percentage of total sample size
1.	Njoro main Campus	764	120	41.7
2.	Nakuru town Centre	447	70	24.4
3.	Nakuru town campus	502	80	27.4
4.	Faculty of health Science	119	18	6.5
TOTAL		1832	288	100

Thus; $n = \frac{Z^2 (p\ q)}{d^2}$

Where z is given statistically as 1.96
p is subjects with the characteristic to be tested
q is calculated by 1-p
d is margin of precision at 0.05
In this case the expected number of subjects with testable characteristics was estimated at 75% or 0.75
Sample size is therefore, $n = \frac{1.96 \times 1.96\ (0.75 \times 0.25)}{0.05 \times 0.05} = 288$

Data Collection Procedure

Permission to conduct research was sought from the university authorities. The participants at the study area were informed in advance to prepare them for the study. Questionnaires were administered and participants completed them in the presence of the researcher in order to get maximum returns. Researcher then collected the completed questionnaires. Interview schedules were face to face encounter. The interviews were conducted to senior university management staff and to line supervisors. The responses recorded immediately and any further explanations noted. Observation schedules were done by walking through various departments and recorded directly on the observational schedule sheets. The departments were purposefully chosen depending on the worksite and activities that are undertaken

RESULTS

Response Rate

From the data collected, out of the 288 questionnaires administered, 282 were filled and returned. This represented a 97.92% response rate, which is considered satisfactory to make concussions for a study. This high response rate can be attributed to the data collection procedures, where the researcher and the assistance personally administered questionnaires and waited for the respondents to complete before picking the filled questionnaires. This ensured that no participant left with the questionnaires. The observation checklist was filled by the researcher himself after observing different selected departments. The choice of the departments was purposeful in order to evaluate hazards encountered at teaching departments, service departments and income generating departments. Interviews involved senior management staff and line supervisors Table 2: Respondents rate per campus

Table 2. Respondents rate per campus

Respondents	Questionnaires administered	Questionnaire returned	Response rate in percentage
Main campus	120	118	98.33
Nakuru Town Campus	80	78	97.5
Nakuru Town Centre	70	68	97.4
Faculty of health sciences	18	18	100
Total	288	282	97.9

Reliability Analysis

The questionnaire had 20 items for the respondents to answer. Based on their feedback, Cronbach's alpha was calculated. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. By default it required that for reliability of the study tool ranges between 0-1 where by scales of 0.7 and above have been indicated to have an acceptable reliability coefficient Scales of 0.7 have been indicated to have an acceptable reliability coefficient but lower thresholds are sometimes used in the literature. In conclusion, the instruments had an acceptable reliability coefficient and were appropriate for the study

Respondents by Gender

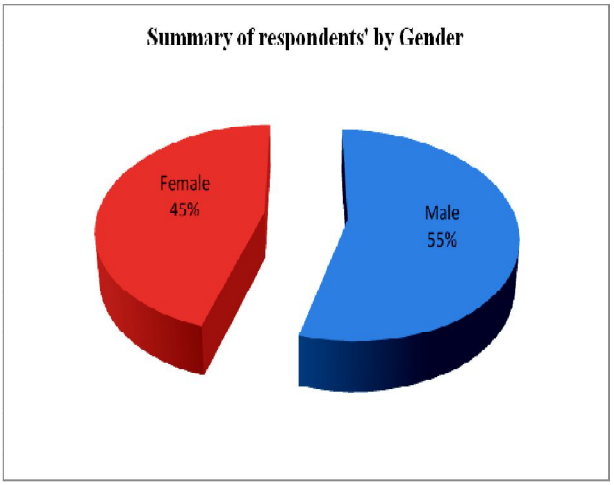


Figure 1. Respondents by gender

Table 2. Summary of respondent's category of workers

Category	Males	Females
Lecturers (n=98) (34%)	59 (60.2%)	39 (39.8%)
Office workers (n=79 (28.0%))	44(55.7%)	35 (44.3%)
Technicians (n=74) (26.2%)	38 (51.4%)	36 (48.6%)
General workers (n=31) (11%)	14 (45.2%)	17 (54.8%)
TOTAL N=282(100%)	N=155(55%)	N=127(45%)

Age distribution

The study also found it paramount to determine age distribution among the respondents in order to determine the majority age bracket who participated in the study. This was in order to determine the validity of the study findings based on age experience. Figure 2 below gives the summary of respondents' age category. Majority (42%) of the respondents

were in age category 40-49 years. This finding concurs with the Kenya Demographic Health Survey report which shows the highest age of employed professionals, technical and managerial workers fell under this age bracket (KDHS, 2008-09). This was followed by 26% of age 29-39 years, 22% ranging between 50-59 years, 6% ranging between 18-28 years and only few 4% were 60-69 years and there was no respondent who was above 70 years. This means that majority of the respondents were at their mid age and therefore mature enough and their responses could be relied upon to make study conclusions. Some health like musculoskeletal disorders and cardiovascular diseases can directly be related to the occupation.

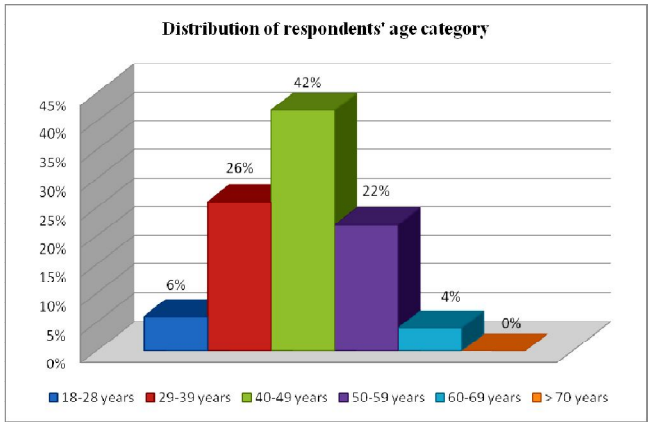


Figure 1. Summary of respondent's age category (n=282)

Marital status

In order for the study to be relevant to its variables, it was paramount to determine the marital status of the respondents. This was necessary in order to determine if their family responsibility contributed to psychosocial hazards at the work place. Some hazards like psychosocial can be as a result of family issues rather the occupation they are engaged in. according to the findings presented in Figure 3 below, majority of the respondents (62%) were married while only a minority(6%) had divorced. It was not easy to establish whether they divorced before they were employed of after as this was not within the scope of the study. Majority of the respondents were married representing 64%, followed by 22% who were single, 8% separated with minority 6% indicating divorced. This conformed to the findings on age bracket that most of the workers at Egerton University were at their mid age and therefore married representing the highest percentage of the sample. However there was no direct relationship between marital status and psychosocial hazards.

Period worked at Egerton University

The study further found it important to determine the period of time the respondents had worked at Egerton University in order to find out if they had been in the institution for long for the reliability of the study findings. It was also important to establish if a worker had been exposed to a certain hazard long enough to cause a disease. Majority of the respondents had worked at Egerton university for less than 5 years representing 35%, followed by those that indicated that they had worked in the institution for 6-10 years representing 21.25%, 17.5% indicated that they had worked in the institution for above 20 years with only few 15% and 11.25% indicating that they had worked in the institution for 11-15 years and 16-20 years respectively. . This means that majority of the employees had worked in the institution for less than 5 years which may be attributed to the several factors. This is fairly a short duration considering that the retirement age for non-teaching staff is 60years while that of the teaching staff is 60years.

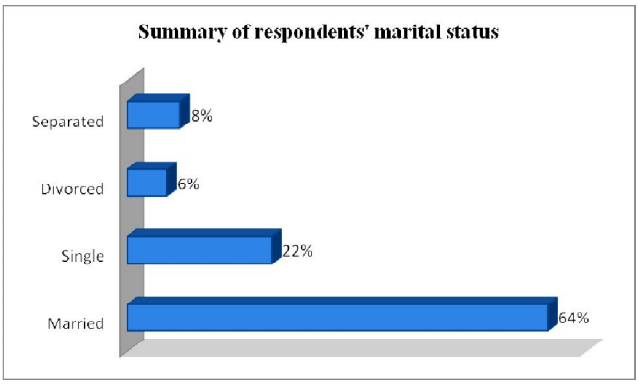


Figure 2. Summary of respondents' marital status (n=282)

The duration may be long enough for a worker who is exposed to hazards. The scenario can also be attributed to atrocities where workers resigned to seek for greener pastures or poor retirement package among other reasons. The researcher would have wished to carry out the study for workers who have worked for a longer duration as most of the occupational diseases require a long duration of exposure for them to manifest. This represents a small proportion while 65% have worked for more than 6 years and hence an adequate representation of the sample size.

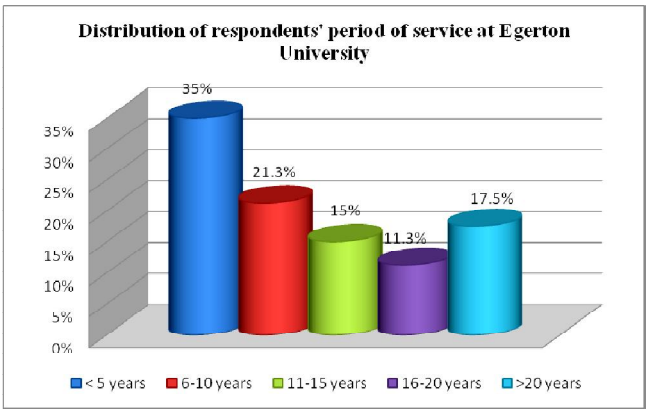


Figure 3. Summary of respondents' period of service at Egerton University (n=282)

The study found it important to establish the level of implementation of occupational safety and health management systems at the university. This was done by determining the level of each component as required. The study also sought several other undertakings including; measures that were taken

when a worker fell sick at the work site, adequacy and efficiency of working tools, and working environment. The other information that was sought by the study was the outcome of the hazards, the relationship of work to illness, and the provision of PPEs. This section also addressed determined when and how often medical examination were done and those who were involved. The findings were as indicated in Figure 7 below.

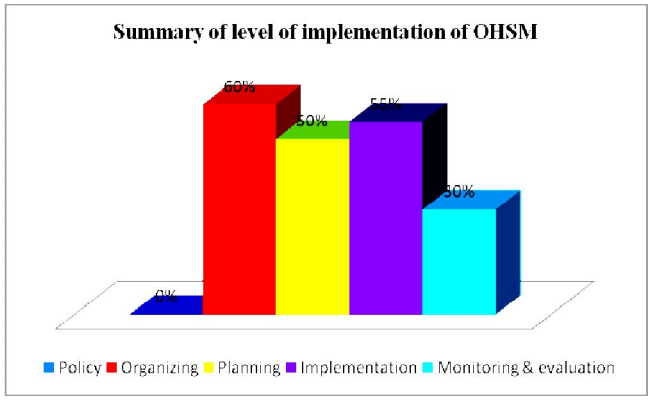


Figure 5. Summary of level of implementation of OSHM system (n=282)

From the findings in Figure 5 above, the level of organizing component of OSH was at 60%, followed by 55% for implementation with 50% and 30% being the level of planning and monitoring and evaluation respectively. There was no OSH policy that was operational. The study found out that the policy was at draft level waiting to be ratified by the university council and the implemented. Absence of a written and publicized policy on safety and health is a drawback to implementation of OSHMS. The other implementation components were done in unstructured manner due to lack of a policy statement. While there was a safety and health committee, it was not well coordinated. The legal requirements as per the Occupational health and safety management committee that OSH management program be headed by a senior member of the university management, was also not observed as it was headed by a Senior Administrative Registrar. Planning and implementation was done in unstructured manner because the guiding document (OSH Policy document) had not been adopted. Investigations to accidents were not detailed because of lack of laid down guidelines

Safety and Health Training

Safety and health training forms a core component for implementation of occupational safety and health management system in order to enlighten the workers on the current occupational safety and health management issues and how safety and health at the work place can be improved. The findings were as indicated in figure 18 below. From the findings as indicated in figure 6 above, majority 88% indicated that they had not attended any training on safety and health with only few 12% indicating that they had gone for training. This implies that majority of employees are likely to be ignorant in occupational safety and health management system implementation process due to lack of training on emerging health and safety issues in work place. This is in contrary with occupational safety and health management system standards that a workplace hazard identification and risk assessment are carried out before any modification or introduction of new work methods, materials, processes or machinery. Training is done if a new machine is introduced, change of an employees work site and as new technology comes in among others. The arrangements is made according to the size and nature of activity of the organization by; ensuring that the necessary information, internal communication and coordination are provided to protect all people in the event of an emergency at the worksite; providing information to, and communication with, the relevant competent authorities, and the neighborhood and emergency response services; addressing first-aid and medical assistance, firefighting and evacuation of all people at the worksite; providing relevant information and training to all members of the organization, at all levels, including regular exercises in emergency prevention, preparedness and response procedures. (OSHA, 2007)

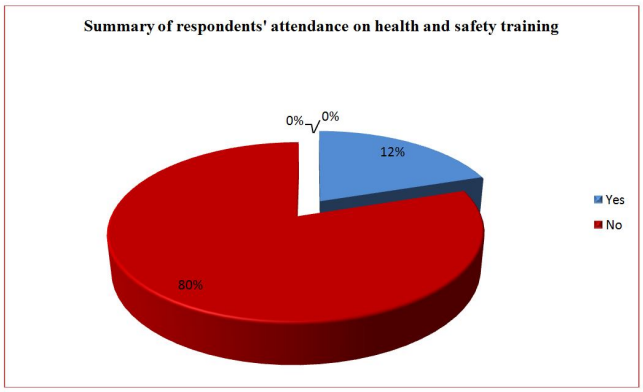


Figure 6. Summary of respondents' attendance to train on safety and health (n=282)

Conclusion

There exist hazards of all types in public universities. The magnitude of exposure of hazards varies from one type and source to another. The factors that influence the implementation are multiple. They include lack of managementment commitment as demonstrated by failure to ratify the occupational safety and health policy in order to operationalize it. The compliance with the OSH 2007 Act which is the bench mark is poor. There is little employee involvement and the channel of communication is to clear. The level of safety and health awareness and safety culture among the workers is low which increase the incidences and accidents at the work site.

Recommendation

- The findings of this study suggest that the promotion of a systems approach needs to pay more attention to the familiar basic challenges – motivating workers to work effectively to eliminate workplace hazards.
- A safety and health management system policy document

should be ratified, adopted and implemented to serve as a guide for managing hazards at the institution. The policy guideline will provide a platform for documenting and controlling current and emerging hazards as innovative methods are developed.

- Further studies should be done to compare other tools used for safety and health management at organization level in view of adopting a simpler, effective and one that is flexible to allow innovation in addition to compliance with state laws on OSH.

REFERENCES

African Newsletter on occupational Health and safety: *Economics of Health and Safety, Vol. 22 number one may* 2012. Health tope liuksenkatu41a FI-00250 Helsinki-Finland

African Newsletter on occupational Health and safety: *Injury and disease reporting SystemVolume 20, number 3, December* 2010. Health tope liuksenkatu41a FI-00250 Helsinki- Finland

African Newsletter on occupational Health and safety: *New Emerging Risks Volume 19, number 3, December* 2009. Health tope liuksenkatu41a FI-00250 Helsinki- Finland

African Newsletter on occupational Health and safety: *Planning Occupational Health and Safety Activities Volume 19, 2009 number 2, August*, Health tope liuksenkatu41a FI-00250 Helsinki- Finland

Armstrong, M. 2001. *A handbook of Human Resource Management Practice 8th Ed*. London: Kogan Page (Stress management).

British Standards Institution, *OHSAS18001:* 1999. *Occupational health andsafety management systems - Specification*. 1999, British Standards Institution: London, UK.

Cullen, the Lord D. 1990. *The Public Enquiry into the Piper Alpha Disaster*.Her Majesty's

Glendon and Warring 1997. Review of organizational Culture in organizations 2nd edition, sudburry, Australia

ILO, 2004. *Proceedings of conference on Global strategy on Health and Safety*

ILO-OSH, 2001. *Guide on occupational health and safety management systems*

J., A. 2001. Effective Occupational Safety and Health Management System:Integration of OHSAS18001, ILO-OSH 2001, and OR-OSHA. *university of Jordan.* Department of Industrial Engineering.International labour Organization [ILO-2001] *Guidelines on occupational healthand safety management systems ILO-OSH 2001*.International Labour Office, Geneva.

Kenya National Bureau of Statistics (KNBS) and ICF Macro 2010. *Kenya Demographic Health Survey* (PP39) 2008-09, Calverton, Maryland:KNBS and ICF Macro

Kothari C.R. 2004 *Research Methodology: Methods and Techniques; Revised Second Edition,* New age international publishers, New Delhi, India

Lehtinen(eds), S. 1998. Proceedings of Regional Symposium On Occupational Health and Safety. *African Newsletter on Occupational Health and Safety*, 27.

Marsh. P. 2009. *OHSM Implementation Guide.* melbourne: employee Health Unit.

Michael H. &Merson, *et al.* (Eds) 2006. .*International public health. Diseases Programs, Systems and Policies* Second edition 2006 Jones and BarteletPublishers , Massachusetts

Mugenda and Mugenda 1999. *Research Methodology for Social Sientists(*

National Policy on Disaster Management 2009. Ministry of special programs, Nairobi Kenya

****