Compliance to OSHA 2007 Legislation in TVET Education and Training Centres, Kisumu County, Kenya

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Abstract:- Occupational Health and Safety refers to an academic discipline area which is related to the protection of the safety, health and wellbeing of people in any kind of profit generating activity. In TVET institutions the role of promoting and protecting safety, health and environment in education is even more significant since the courses offered there are practical in nature hence the risk of injury is higher. The main objective of this study was to investigate compliance to the legislation of Occupational Safety, Health and of safe systems of work as stipulated in the OSHA 2007 in public TVET Education Institutes in Kisumu County, Kenya. Descriptive survey was employed by the researcher for collection of statistical data to describe the compliance to OSHA 2007 in Kisumu County, Kenya. The research targeted 26 registered public TVET institutions, 26 principals, 416 trainers, 234 workshop technicians and 32,000 trainees in Kisumu County, Kenya. The researcher adopted stratified random sampling. The sample size obtained was 24 public TVET institutions, 24 principals, 203 trainers, 148 workshop technicians and 395 trainees. Quantitative statistical data and qualitative statistical data was obtained by the use of tools such as questionnaires for quantitative data and observation checklist for qualitative data. The researcher obtained data which was then analysed thematically. The software used for the analysis is the Statistical Package for Social Sciences software. The data was then presented using descriptive statistics. The findings: compliance to OSHA 2006, Occupational Safety, Health risk management and safe working systems were neglected in most TVET institutions in Kisumu County Kenya. The study recommends that; emphasis be placed in knowledge, awareness and compliance on the OSHA 2007 in public TVET institutions, the OSHA 2007 statutes be enforced in TVET Education institutions, the top leadership in TVET Education institutions to comply and enforce OSHA 2007 in the work places.

Keywords:- Occupational, Safety, Health, Environment, TVET, Compliance, OSHA 2007,

I. INTRODUCTION

Occupational safety is a study area that focuses on ensuring the safety, health and wellbeing to individuals that are involved in an income generating activity as employees. The main purpose OSH initiatives is to encourage development of a safe and conducive working conditions. These activities have a ripple effect where they may also protect surrounding communities and any other partner involved in the activities of the workplace (WHO, 1995). When Occupational Safety is neglected this leads to accidents at the workplace. An accident can be defined as "an unplanned and unanticipated event" according to the World Health Organisation.

OSH in TVET Education centres involves the measures undertaken by Ministry of Education, TVET authority, the boards of management in TVET institutions, the trainees, the trainers, the parents and other stakeholders with the aim of reducing the likelihood of an accident, bodily injury, psychological and emotional distresses. or completely eliminate the risk. It is a fundamental and absolutely necessary facet of the teaching and learning process. This is largely because the TVET institutions are the major providers of technical workforce in the country. It is safe to conclude that, this part of learning cannot be separated with the other facets in technical education. What trainees experience at this level sets the foundation that may affect their work experience later in their life. When an unsafe environment is used for teaching and training this undermines education as a basic human right.

According to the world health organisation for an organization to be healthy it must acknowledge all the elements of OSH while coming up with programs and policies for the welfare of its employees (WHO, 1999). In order to enhance an increased learner enrolment, increased completion rates and also increased student retention rate all educational stakeholders should foster a safe and secure learning environment. This will also result to attainment of high quality education standards. On the other hand is the risks to accidents are not mitigated there are high chances of accidents leading to disabilities, fatalities, emotional trauma as well as psychological distress. This in turn can result to low self-esteem and subsequent poor performance (Kenya MOE, 2008).

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WHO and the ILO are determined to ensure that all workplaces enforce and sustain the highest possible state of physical wellbeing, psychological wellbeing and social wellness of all their employees and anyone accessing their premises of work. All the worker should be protected from any disease that can be resulted by their workplace due to poor working conditions and the working environment should suit the workers psychological and social wellbeing (WHO, 1995).

Internationally and even nationally the statistics of occupational accident, incidents and industrial disasters and their related loss in terms of human suffering and monetary losses have been of great concern due to their magnitude and impact (Kiwekete, 2008). There has been great improvements to cub the magnitude and severity of occupational related accidents and incidents in many industries, however the ILO and WHO estimate that 1.9 million people suffered fatalities from their occupations globally, and that globally this figure is on the rise (WHO, 2021). This are the statistics even though many countries have come up with methods and passed laws to guarantee safety for workers in any given form of employment.

Statement of the Problem

Kenva, registered the first legislation for safety in 1937. It was called the Factories Act. This act has been reviewed severally giving rise to the current act called Occupational Safety and Health Act of 2007 (OSHA 2007). The OSHA 2007 describes how it is to be administered, how it should be enforced. It also states the offences, penalties and all the legal proceedings if there were to be any breach of its statutes. The act clearly states both general and also specific statutes of ensuring that a work environment is safe physically, psychologically and socially. The law also gives the details of specific safety characteristics that are mandatory for all workplaces such as the roles and responsibilities of the employer, employee and also the roles of the government of Kenya. Several roadblocks have been encountered during the implementation of this legislation in various sectors in Kenya.

This study aimed to investigate compliance to legislation of OSH and use of safe systems in any remuneration generating environment in line with what is stipulated in the OSHA 2007, in regard to TVET Education Centres in Kisumu County, Kenya.

According to Hamalainen, countires in the Sub-Saharan Africa, have slightly higher fatal occupational accidents annually to the tune of 54,000 (Hamalainen *et al*, 2005).

II. SUMMARY OF LITERATURE REVIEW

A research done in Australia, found out that OSH, safety and health indicators were more effective when senior principals and the workers were involved in the occupational safety programs (Hermanus, 1999).

According to the American Chemical Society; how safety is treated is in most cases determined by the safety culture fostered in an organisation. The strength of the safety culture is empowered when the top leadership and management are actively involved in the safety process. Therefore the management should encourage strong safety culture on each facet in an organisation (American Chemical Society, 2012).

This should be the same in TVET institutions in Kenya. The safety culture should be encouraged from top to bottom. The top management should take the fore front in safety. If this is not done the employees and the students would not take it seriously. The safety culture in an organisation can be determined by the shared values regarding safety, scrutiny of the processes and procedure, the organisations policies to raise safety, each stakeholder's contributions to safety and stability of safety in the organisation (Njeru, 2013).

When leadership of an organization is committed to safety the end results is low accidents incidents rate and therefore low injury rate (ACS, 2012). In all levels of an organisations the roles and responsibilities that each individual contributes to safety should be clearly stated. This enhances the safety culture of the organisation. Strong safety culture is also enhanced when the organisations have in place safety policies and the good will to have a safe environment. This involves having the right attitude towards safety and also implementing accident incident investigation systems (Hill, 2012).

In an organisation without the necessary measure to enhance safety the safety culture is affected. Since these measures are to be put in place by the organisations leadership, therefore poor leadership is the main contributor to poor safety culture.

III. METHODOLOGY

Descriptive design was adopted in this research. The study adopted pragmatist paradigm that allows use of multiple data sources to investigate real world problems. When applied pragmatic paradigm is essential in assisting the researcher satisfy the yardstick for estimating the goodness of the answers obtained in a more informative method as compared to the use of a single strategy (Tashakkori & Teddlie, 2003). Mixed methods type of research exploits both quantitative and qualitative research methods in so doing the research questions are properly analysed and answered. Therefore mixed methods was employed research in this study to answer questions regarding compliance to Occupational Health Safety Act 2007 in public TVET Educational centres in Kisumu County in Kenya.

The study was carried out in selected TVET Educational centres located in Kisumu County in Kenya. The choice of Kisumu County as a study area is due to the diversity of TVET institutions, large number of TVET institutions and also because there existed no documentation

of a similar study in Kisumu County, Kenya.

The research targeted 26 registered public TVET institutions, 26 principals, 416 trainers and 32,000 trainees in Kisumu County, Kenya.

Sample Size from each Subgroup was Determined by Yamene Taro Formula below:

$$n = \frac{N}{1 + N(e^2)}$$

> The Formula is Represented as below;

n =sample size

N = population

e = error (0.05).

Therefore, the sample size is 24 principals, 203 trainers/workshop technicians and 395 trainees all drawn from 24 public TVET institutions. This study employed random stratified sampling technique. This assisted the researcher to acquire a representative subgroup of the population.

Table 1 Sample Size

Category	Target population	Sample size					
TVET institutions	26	24					
Principals	26	24					
Trainers	416	203					
Workshop technicians	234	148					
Trainees	32000	395					
Total	32702	794					

In this study, questionnaires were employed to obtain data that is both quantitative and qualitative. Also an observation schedule was used to obtain qualitative data.

To obtain the validity of the research instruments researcher obtained the opinion of the supervisors and that

of a panel of experienced researchers from University of Eldoret, to review on both content and construct validity.

Also in order to obtain the reliability of the research instruments, pilot study was conducted to a sampled population. The test-retest method was employed in conducting the pilot study.

IV. RESULTS AND DISCUSSION

> Demographic Information of the Respondents

The principals, trainers, workshop technicians and the students gave below information:

> Age group of the respondents

The respondents indicated their age groups as below;

Age (years)	Principals	%	Trainers	%	Workshop technicians	%	Students	%
18-30yrs	-	-	8	7.8%	3	4.0%	157	79.3%
31-40yrs	-	-	34	33.3%	44	58.7%	39	19.7%
41-50yrs	6	46.2%	39	38.2%	21	28.0%	2	1.0%
Above 51yrs	7	53.8%	21	20.6%	7	9.3%	-	-
Total	13	100%	102	100%	75	100%	198	100%

Table 2 Age Brackets of the Respondents

The age bracket of the respondents was significant in addressing the objective of the study. The age bracket of the principals was above 41ys in all the sampled institutions. This was an indicator of good experience. The trainers and workshop technicians were clustered between 31years and 50years while most students were below 30 years

> Demographic Information on the Gender

The gender of the 13 principals 102 trainers, 75 workshop technicians and 198 students is tabulated in Table 3.

Table 3 Gender of Principals, Trainers, W	Vorkshop Technicians and Students
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Gender	Principals	%	Trainers	%	Workshop Technicians	%	Students	%
Male	9	69.2%	76	74.5%	48	64.0%	109	55.1%
Female	4	30.8%	26	25.5%	28	36.0%	89	44.9%
Total	13	100%	102	100%	75	100%	198	100%

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The gender of the respondents was not found to have any significant impact on the responses. The sampled population was made of more males than females. Demographic Information on the Length Service of the Principals, Trainers and Workshop Technicians in their Current Stations

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The length of service of the institution management, trainers and workshop technicians was tabulated as below in Table 4.

	Table 4 Length of Service of the Respondents								
Length of service	Length of service Principals % Trainers % Workshop Technicians %								
0-5yrs	1	7.7%	42	41.2%	23	30.7%			
6-10yrs	4	30.8%	53	52.0%	47	62.6%			
Above 10yrs	7	53.8%	7	6.8%	5	6.7%			
Total	13	100%	102	100%	75	100%			

The length served at a particular station informed on the likelihood of a responder being fully aware of the institutions' safety procedures. 53.8% of the principals, 52.0% of the trainers and 6.7% of the workshop technicians indicated that they had served in current station for a length of time above 10 years. 30.8% of the principals, 52.0% and 62.6% of the workshop technicians had served in the current station for a length of time of 6 to 10 years. This sample formed a very informed and experienced population.

The Level of Education of the Principals, Trainers and Workshop Technicians

For the level of education obtained by the respondents the data in Table 5 below was obtained by the researcher:

Table 5 Education Level	of the Principals	Trainers and Worksho	n Technicians
Table 5 Education Level	of the Finicipals,	Trainers and worksho	p recimicians

Level of Education	Level of Education Principals % Trainers % Workshop Technicians						
Post graduate	12	92.3%	10	13.7%	2	2.7%	
Graduate	1	7.7%	66	36.3%	13	17.3%	
HND	-	-	21	47.1%	23	30.7%	
Diploma	-	-	5	7.8%	31	41.3%	
Other	-	-	-	-	6	8.0%	
Total	13	100%	102	100%	75	100%	

The demographic information on the level of education indicated that the staff had more than basic education. 92.3% of the principals were postgraduates while 36.3% of the trainers were graduates and 41.3% of workshop technician were diploma holders. Only 8.0% of the workshop technicians who had education level below diploma. This indicated that that the respondents were well educated. They therefore were to clearly understand the questionnaires and readily provided the needed information.

Compliance to OSHA Laws and Safety Systems in Public TVET Institutions

The objective of this study was to investigate compliance to OSHA Laws and that of safe working systems in public TVET institutions. The respondents were requested to provide information regarding this issue. Their responses are discussed below.

Existence of Effective Methods to Implement OSHA 2007

The researcher wanted to know whether there existed an effective method of implementing OSHA 2007.The principals, trainers, workshop technicians and students were asked to confirm whether their institutions had an effective method of implementing OSHA 2007 in place. The data was obtained as below:

	Table of Existence of an Effective Method of Implementing OSHA 2007									
Response	Principals	%	Trainers	%	Workshop Technicians	%	Students	%		
Yes	4	30.8%	12	11.8%	12	16.0%	23	11.6%		
No	8	61.5%	85	83.3%	57	76.0%	139	70.2%		
I don't know	1	7.7%	5	4.9%	6	8.0%	36	18.2%		

Ta	ble 6 Existenc	e of an Effe	ctive Method	l of Imp	lementing	OSHA 200)7

From table 6, 61.5% of the principals, 83.3% of the trainers, 76.0% of the workshop technicians and 70.2% of the students indicated that they had no systems in place to enforce OSHA 2007. From the sample of the principals only 30.8% indicated to have an effective method of implementing OSHA 2007. This indicated lack of proper methods to reinforce OSHA 2007 in TVET institutes in

Kisumu County. Only 11.8% of the sampled trainers, 16.0% of the sampled workshop technicians and 11.6% of the students who indicated to have experienced an effective method of administering OSHA 2007.

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> Availability of an Elaborate Process of OSH Risk Identification and Assessment

The the researcher sort to find out if there was in place an elaborate process of OSH risk identification and assessment. The responses were analysed and as below in figure 1;

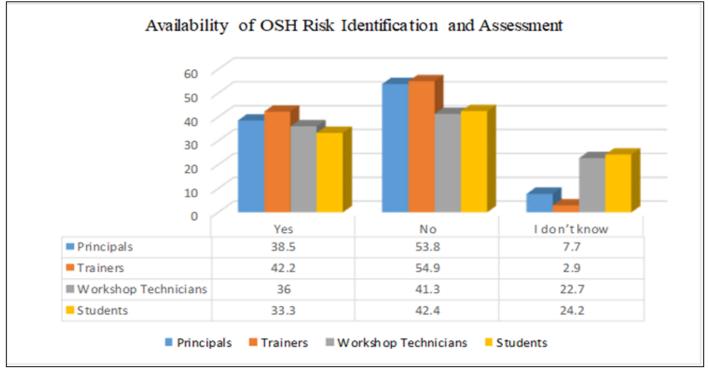


Fig 1 Availability of OSH Risk Identification and Assessment

From the data, 38.5% of the principals, 42.2% of the trainers, 36.0% of the workshop technicians and 66.0% of the students indicated that there were OSH risk identification and assessment processes in their TVET institutions. This was a positive observation that risk assessment was one of the tools employed by the management. Still, 48.1% population of the respondents, indicted that there was no OSH risk identification and

assessment processes. 14.4% of the sampled population indicated that they were not aware of any OSH risk identification and assessment processes in their institutions.

Existence of a Maintained Risk Assessment Record

The respondents were also asked whether there existed a maintained Risk Assessment record in their institutions. The responses were analysed as below in Table 7.

	Table 7 Existence of a Maintained Kisk Assessment Record									
Response	Principals	%	Trainers	%	Workshop Technicians	%	Students	%		
Yes	9	69.2%	44	43.1%	23	30.7%	42	21.2%		
No	3	23.1%	32	31.4%	34	45.3%	55	27.8%		
I don't know	1	7.7%	26	25.5%	18	24.0%	101	51.0%		

Table 7 Existence of a Maintained Risk Assessment Record

From the figure, 69.2% of the principals indicated that they had the OSHA risk management documents in place. This was also seconded by 43.1% of the trainers and 30.7% the workshop technicians. However, 23.1% of the principals indicated that they didn't have OSHA risk management documents in place. This was also suported by 31.4% of trainers and 45.3% of the workshop technicians. This was an indication that OSHA risk management practice in some institutions were non existent.

Existence of Workplace Safety Inspections and Workplace Safety Audits

The respondents were also asked to respond on existence of workplace inspections and audits. The responses were as below in Table 8.

Table 8 Existence of Workplace Inspections and Audits on S	Safety
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Response	Principals	%	Trainers	%	Workshop Technicians	%	Students	%
Yes	8	61.5%	35	34.1%	19	25.3%	64	32.3%
No	5	38.5%	36	35.3%	37	49.4%	72	36.4%
I don't know	-	-	31	30.4%	19	25.3%	62	31.3%

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The responses indicated that workplace inspections were existent in 61.5% of the sampled TVET institutions but not existent in 38.5% of the TVET institutions according to the principals. This was also evident from 34.1% of the trainers, 25.3% of the workshop technicians and 32.3% of the students who indicated that their institutions had workplace inspections and audits. From the data, the largest percentage of the TVET institutions didn't have elaborate workplace inspections and audits.

➤ How Corrective Actions on Safety Were Closed

The respondents were asked whether after every accident or incident corrective action were developed and closed to reduce the likelihood and impact of the risk from the same accidents or incidents. The responses were analysed and presented as below in figure 2;



Fig 2 Corrective Action Taken After Accident

The data from all the respondents indicated that in most cases corrective actions were rarely taken after an accident or incident. This was as indicated by 84.6% of the principals, 86.3% of the trainers, 89.3% of the workshop technicians and 57.1% of the students. Only 15.4% of the principals, 6.9% of the trainers, 8.0% of the workshop technicians and 14.1% the students who indicated that they had corrective actions after accidents in their TVET institutions.

The rest of the sampled population of 6.9% of the trainers, 10.7% of the workshop technicians and 28.8% of the students were not aware of what happens after an accident. This was equivalent to stating that there were no corrective actions after accidents and incidents.

Use of Safe Work Procedures

The respondents were queried on the use of safe work procedures for any risky training. The responses were as below in figure 3:

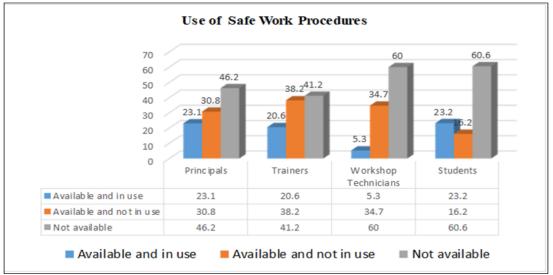


Fig 3 Use of Safe Work Procedures

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According to 46.2% of the principals safe work procedures were not available in their institutions. This was also the case as indicated by 41.2% of the trainers, 60.0% of the workshop technicians and 60.6% of the students.

The sampled population that had safe work procedures in place was considerably low. This was represented by 23.1% of the principals, 20.6% of the trainers, 5.3% of the workshop technicians and 23.2% of the students. This positive indications showed that there was still a small population that had safe work systems in place.

➢ Work Machinery and Materials Safety

The respondents were queried on the safety of work machinery and materials safety in the institutions. The responses they gave were as indicated below on Table 9;

	Strongly Agreed		Agreed		Disagreed		Strongly Disagreed		Total %
	Ν	%	Ν	%	Ν	%	Ν	%	
Machinery/equipment are tested for safety before use at workshop	25	6.4	46	11.9	178	45.9	139	35.8	100
Chemicals /materials supplied are tested, classified, marked as per their characteristics and MSDS (material safety data sheet) placed at place of use	74	19.1	96	24.7	126	33.2	92	23.7	100
Reports of faulty machines/facilities are taken seriously and corrected	17	4.4	38	9.8	137	35.3	198	51.0	100

Table 9 Work Machinery and Materials Safety

The responses indicated that machinery safety was low as indicated by 81.7% of the population. The machines were rarely tested for safety before use. Only a small population of 18.3% agreed that the machines in their institutions were tasted for safety before use. This indicated a big gap as far as equipment safety in concerned.

The reports on faulty machines were not taken seriously as agreed by 86.3% of the respondents. They indicated that on reporting faulty machinery it took long for them to be acted upon. Still there was some considerable institutions that were proactive on machine safety once a machine is reported to be faulty and unsafe. This were represented by 14.2% of the respondents. This indicated that only a small portion of the sampled population would be regarded as practicing machine safety.

There was non-compliance regarding chemical and material safety data sheets since they were not provided for at the places of use as responded by 56.9% of the respondents. Non-compliance to this OSHA 2007 initiatives indicated that awareness to OSH Act 2007 statutes was inadequate.

> Top Management Commitment to Safety

The respondents were queried on the commitment of the top management to safety. The responses given were as below on Table 10;

	Strong	ly Agree	Ag	ree	Disa	agree	Strongly I	Disagree	Total %
	Ν	%	Ν	%	Ν	%	Ν	%	
Senior management have made safety and health a routine	12	3.1	23	5.7	189	48.7	165	42.5	100
Senior management has set safety and health objectives and targets in an effort to improve safety at work	7	1.8	33	8.5	139	35.8	209	53.9	100
Senior management has incorporated safety and health performance in appraisal of employees	38	9.8	61	15.7	119	30.7	170	43.8	100
There are established effective organizational structures to improve safety at work	15	3.9	33	8.5	171	44.1	169	43.8	100
The employer takes seriously legal liability for health and safety	89	22.9	95	24.5	123	31.7	81	20.9	100
Senior management has implemented the standards of safety and health	133	34.3	124	32.0	76	19.5	55	14.2	100

Table 10	Top M	anagement	Commitment to	Safety
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OSHA 2007, regards the manager of a place of work as the occupier and holds him personally responsible the workplace safety of all the employees and anyone else who can access the workplace. Therefore, 56.2% of the respondents indicated that occupier did not takes seriously overall legal responsibility for health and safety. Only 42.8% of the population agreed that the occupier took seriously legal liability for health and safety.

The respondents also commented on whether the top leadership was acquainted with the standards put in place for a safe and healthy working environment and also implemented the same standards. 66.3% of the population

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indicated that the management was acquainted standards put in place for a safe and healthy workplace, while 33.7% of the population indicated that the management wasn't fully aware and didn't implement the standards put in place for a safe and healthy workplace ent. This factor indicated that that knowledge of the OSHA 2007 among the management was low and the implementation status was also poor.

53.8% of the institutions didn't employ any OSH risk identification and assessment process and therefore they didn't maintain any risk assessment records. This indicated that there was no clear method of tracking safety risks in the training facility.

In case of an accident the OSHA 2007 recommends that the accidents be reported to DOSH depending on the degree and also corrective actions to minimise recurrence be developed and closed (OSHA, 2007). The researcher found out that there existed no approach for corrective actions identification and closure. This indicated that after an accident the chances of recurrence were left potentially high.

V. CONCLUSION

The principals indicated that they had no systems in place to enforce OSHA 2007. This indicted lack of proper methods to reinforce OSHA 2007 in TVET institutes in Kisumu County. Workplace inspections were existent but safe systems of work were not employed.

Use of safe work procedures such as inspections of machinery before use was found out to be low. This indicated that the compliance to the OSHA 2007 was inadequate as regards risk management practices. The top management was also identified as lacking emphasis on occupational safety. This showed that OSHA 2007 statutes in Kisumu County were not inadequately complied to regarding risk management practices and of safe systems of work.

The research established that compliance OSHA 2007, compliance to safety risk management and to safe systems of work as stipulated in the OSHA 2007 was inadequate in TVET Educational Centres in Kisumu County, Kenya.

RECOMMENDATIONS

In view of the foregoing, the researcher made below recommendations deduced from the findings and the conclusions as guided by the objectives of the study:

- The OSHA 2007 safety systems be installed in TVET Educational Centres in Kisumu County and Kenya at large.
- The top management in TVET institutions to comply and enforce OSHA 2007 in the work places.
- The TVET Authority to ensure compliance to OSH risk management activities such as risk assessment programmes, workplace risk audits and workplace inspections

• Top management in TVET institutions to ensure a properly structured system with a clear demonstration of its commitment to provide training in occupational safe environment by ensuring compliance to OSHA 2007.

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