Assessment of Occupational Safety and Health Awareness and Practices in Public Health Facilities Uasin Gishu County, Kenya

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Abstract: Occupational health and safety is a disciplinary area which is concerned with the protection and safety, health as well as the welfare of people engaged in any kind of work or employment. The study aimed at assessing the occupational health and safety awareness and practices among the health care workers in public healthcare facilities in Uasin Gishu County, Kenya. The study adopted a descriptive survey research design which targeted 191 public health facilities workers from 6 sub county hospitals and Uasin Gishu County referral hospital. The study adopted a purposive sampling and simple random sampling techniques. Questionnaires were used as the main data collection instrument. The data was analyzed using descriptive statistics; means, frequencies and percentages and inferential analysis of correlation. From the study it was concluded that 84% the respondents were aware of the existence of the occupational Health and safety program, although there is still need to create awareness amongst the significant proportion of the respondents who were not aware, 88% agreed that guidelines on occupational health and safety precautionary principles were available in their facilities. The study found out that there is a significant relationship between OSH awareness and practices such as change of gloves, hand washing, immunization against typhoid and Hgd, reporting occurrences of accidents and use of PPEs. The study recommends that ministry of health should make specialist training in occupational safety and health for their staff; they should ensure provisions of this policy and technical guidelines apply to all health institutions and administrative units within the health sector. Further hospital Management should put in place a regular monitoring team who will ensure that employees observe in strict terms safety measures put in place in order to avoid any mishaps and accidents. Lastly the study suggests that further research on the factors determining the implementation of occupational health and safety awareness and practices at public health care facilities in Uasin Gisha, County, Kenya.

Key Words: Occupational Safety and Health, Practices, Health Facilities

I. Introduction

It’s estimated that 317 million accidents worldwide occur annually at workplaces resulting into losses where close to 2.3 deaths accrue annually leading to production loses, hence impacting negatively on the economy of the nation at large this can be attributed to the poor health and safety policies or its implementation. (ILO, 2003). 4% of the Gross Domestic Production is lost due to the poor health and safety measures at workplace coupled with risky and injurious work environments (ILO, 2003).

There benefits of promoting occupational health and safety at work place will enhance economy reducing health burdens and costs linked to it enabling people to live more contented and longer (Cudjoe, 2011; Bennet, 2011). It is the recommendation of ILO that occupational health services are established near places of employment. The purpose of this is to protect the workers against any physical or mentally health related hazards arising from work resulting to the ill health of the worker. In a study conducted to assess the occupational health hazards among healthcare workers in Kampala, Uganda; showed that healthcare workers work in environment that is most hazardous due to their work related activities (Rawlance et al, 2015).

1.1.2 OSH perspective in Kenya

The total employed persons in all sectors as at the year 2010 was 10,960,000 this is according to Kenya Economic Survey 2010. The number of workplaces in both the formal and informal economies (KNBS, 2007) was 140,000, most of which were micro or small sized enterprises with a low awareness of OSH, and thus exposing a huge number of workers to workplace risks.

Kenya Economic Survey 2012 there are total of 68,185 healthcare workers and of this 57,548 are in government facilities. 13,555 in primary health care facilities and 12,361 at county level facilities. 19, 563 are
nurses, 2,721 clinical officer and 2,072 laboratory technologist. This indicates that nurses, clinical officers and laboratory technologists these cadres constitutes majority of healthcare personnel in our health facilities.

In the year 1950s Kenya found necessary to have a legal instrument to manage the safety, health and welfare of employees in factories. The British Factories Act of 1937 was adopted during that colonial era. And later in 1990 the Factories Act was amended to cover a wider scope and was revised to the Factories and Other Places of Work Act of 1990. In 2007 this Act was rescind, and was replaced by the Occupational Safety and Health Act and later enacted to Work Injury Benefits Act which was governed by the Directorate of Occupational Safety and Health Services (DOSHS).

Other legislation that touches on OSH includes the Kenyan Public Health Act CAP 242, the Environmental Management and Coordination Act (EMCA) (1999), the Radiation Protection Act CAP 243, and the Pest Control Products Act Cap 346. These laws are enforced by different ministries and departments of the Government. Infections from blood borne pathogens are the most known risk that affects health care workers (MOH, Kenya, 2014). A health risk evaluation was carried out by the Ministry of Health, in collaboration with Intra Health International in 97 health facilities (level 2 to 5) across the country between 2012 and 2013 discovered that the ministry lacked an all-inclusive Occupational Safety and Health program(OSH,2013).

In spite of the intensified efforts by the Government of Kenya that were aimed at providing a safe working environment in hospitals countrywide, the OSH risk assessment acknowledged serious gaps within the health sector. These gaps included lack of job hazard analysis, inadequate OSH training needs assessment for workers, and the absence of displayed safety and health related SOPs in health facilities (Kenya Ministries of Health and Intra Health International, 2013).

1.2 Statement of the Problem
Safety in any working environment is an issue that should be dealt with a lot of concern due to the fact that it provides an enabling environment to workers in ensuring high quality performance and reduction of risks. In view of the above hospitals are organizations that carry a large workforce drawn from different professions who are required to carry their tasks in sometimes overcrowded places, limited facilities and even limited trainings to this awareness (Kenya Ministries of Health and Intra Health International, 2013).

Health facilities are large, complex organizationally, system driven institutions employing large numbers of workers from different professional streams. Some of the potential hazards are physical chemicals, biological and psychological in nature. And therefore Health and Safety issues relating to the personal safety and protection of its workers is a very important Environmental Health concern for hospitals (Bert, 2013).

The international labor organization (ILO) objective has been the promotion of decent, safe and healthy working conditions and environment since the Organization was founded in 1919, despite this fact, the implementation of OSH in most health facilities in Kenya is low and thus has contributed to exposure to hazards (Mwawasi, 2012).

Uasin Gishu County had a population 1,044,675 people (Ministry of Health, Kenya Health Information System (HIS) statistical report, 2013), with 104 health facilities (Kenya Service Availability and Readiness Assessment Mapping Report, 2013) and the ratio of health personnel as; 118 nurses per 100,000 people, 27 doctors per 100,000 people and 37 clinical officers per 100,000 people (Integrated Payroll and Personnel Database, 2013). The ratio displayed predicts a high workload per health personnel with high exposure to the health hazards and, limited time to exercise some of the OSH practices such as hand washing, glove changing, sensitizations and trainings. It is on this basis that the study sought to assess the occupational health and safety awareness, practices and impact of workplace environment on safety of healthcare workers in public healthcare facilities in Uasin Gishu County, Kenya.

1.3 Research Objectives
i) To establish level of occupational health and safety awareness among health care workers in public healthcare facilities in Uasin Gishu County.

1.4 Research Hypothesis
H01 : Level of awareness has no effect on OSH practices in public health facilities in Uasin Gishu County.

II. literature review

2.1 Occupational health and safety awareness among health care workers in public healthcare facilities
In a report by the Bureau of labor statistics U.S., (2011), healthcare workers are exposed to many hazards that can adversely affect their health and well-being. Long hours, changing shifts, physically demanding tasks, violence, and exposures to infectious diseases and harmful chemicals are examples of hazards that put these workers at risk for illness and injury. The study further recorded 253,700 work-related injuries and illnesses in 2011, which are 6.8 work-related injuries and illnesses for every 100 full-time employees. The injury

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and illness rate in hospitals is higher than the rates in construction and manufacturing two industries that are traditionally thought to be relatively hazardous. As per nature of their work, health care workers are exposed to various kinds of occupational risks. In a study conducted in Nigeria to assess the level of awareness of occupational risks among health care workers, 85% of the respondents were aware while the 15% were not aware of the occupational risks they are exposed to. B. W Osungbemiro et al (2016).

A research carried out in two hospitals in Jamaica to assess the knowledge, compliance and practice of occupational infection control among healthcare workers found that healthcare workers were aware of the risk of transmission of infection, but their compliance with universal precautions was inadequate (Foster et al., 2010). 63% of the healthcare workers were aware that utilizing needles for drawing blood could expose them to the transmission of infections but only 38% wore gloves. In this study, a comprehensive program to educate the healthcare workers regarding compliance with universal precautions was recommended to improve their knowledge and practice. Awareness of safety programs is beneficial to business operations, since the implementation of safety interventions significantly reduces direct health care cost and absenteeism (Bunn et al. 2001).

In Malaysia, a study conducted showed that the level of knowledge and awareness towards occupational safety and health (OSH) aspects among workers in medical laboratory in Klang Valley was low with only 61% of the respondents were aware of the OSHA (Anuar et al, 2009). Another study was again conducted, where the participants were doctors, nurses, medical support staffs and administrative officers who showed that the level of OSH awareness and knowledge among healthcare professionals in Malaysia was moderate (75%) (Lugah et al, 2010). It also found that the proportion of participants who had good OSH knowledge was low. Conclusion from this study suggested that healthcare organizations should conduct more workshops and training for, specific healthcare worker groups in order to increase knowledge on OSHA.

In a study conducted in Tanzania to assess the status of occupational safety among health service providers in hospitals by Manyele, Ngonyani, Eliakimu, (2008), it was stated that none of the 430 respondents had received training on OHS as a profession. Limited information on the awareness of health care workers in OSH is available but the situation in Tanzania and Nigeria reflects the occurrences in Kenya. It is apparent that healthcare workers at all levels are exposed to occupational injuries as well as diseases while performing their duties.

Therefore knowledgeable healthcare workers especially those in charge of the health clinics are very important because they play a role in making sure that their workplaces are safe and in guiding staffs under them to take further actions if accidents happened to these staffs.

III. Materials And Methods

The study employed a cross sectional survey research design. The study targeted 374 respondents who include managers, nurses, medical Lab Tech and clinicians in the 6 Sub-county hospitals and 1 county hospital of Uasin Gishu County. Selection of the hospital managers was done using purposive sampling technique while simple random sampling was used in selecting the nurses, clinical officers and lab technicians. The sample size of the nurses, clinical officers and lab technicians was based on Yamane's 1967 formulae which is as follows:

\[ n = \frac{N}{1 + Ne} \]

The Where;
\( n \) denotes the sample size,
\( N \) denotes the population size, (367)
while
\( e \) denotes the level of precision at (0.05).

\[ n = \frac{367}{1 + 367(0.05)^2} = 191 \]

3.1 Data Analysis

Data for this study was analyzed both quantitatively and qualitatively by. Statistical Package for Social Sciences (SPSS) was used to analyze quantitative data and Descriptive statistics and inferential analysis was done. Tables, graphs and charts were used in presentation of data to allow visual simplicity of presented data. Thematic analysis was used to analyze qualitative data and was incorporated to the quantitative data by quoting responses from interviews that agreed with the findings.

3.2 Data validation

A preliminary survey of questions was conducted to enhance construction of relevant and appropriate items. The researcher ensured that all objectives were adequately covered by cross checking the objectives and corresponding items. The instruments for data collection was sub-divided as per the variables and objectives to
ascertain whether the content comprehensive and representative of the behavior domains to be measured. Content validity of the instrument was determined through expert judgment which involved discussing the items in the instruments with the supervisors, lecturers and colleagues. Their suggestions for improvement were incorporated in the final instruments used in the study.

To ensure reliability of research instrument a pilot study was conducted in Uasin Gishu County Hospital a month before the actual study. Cronbach’s alpha was used to assess the reliability coefficient of the research instruments. From the study, the results of the questionnaire were reliable as the alpha value was 0.783 justifying that the instruments were reliable and usable in the study. This is according to Mugenda and Mugenda (2003) who stated that any value above 0.6 is considered appropriate threshold.

IV. Results And Discussion

4.1 Level of occupational health and safety awareness in public healthcare facilities

The researcher found out the level of occupational health and safety awareness in public healthcare facilities. Further, the researcher sought to establish the source of information and the types of common hazards in the facilities.

4.1.1 Awareness of occupational health and safety.

![OSH Awareness Chart]

From the chart above 84% of the respondents were aware of the occupational safety and health in this study with 16% not aware of the existence of occupational safety and health. With high level of awareness of 84% it is expected to reflect good OSH practices. This concurred with a study done in Nigeria to determine the level of knowledge attitude and practice among healthcare workers, where 89% were aware of the OSH and 11% not aware (Olufemi, 2016). Further to draw more conclusions on the study a comparison of the profession and awareness OSH. In the table below figure 4.6, it shows that of the 151 respondents, 127 were aware of the OSH policies while 24 were not aware, it also shows that of the 24 who were not aware of the OSH policies 20 were nurses, 3 clinical officer and 1 lab technologist.

| OSH awareness & respondents profession Cross tabulation |
|-----------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                   | Respondents     | Total           |                 |                 |
|                                   | Nurse | Clinical Officer | Lab Tech |                |
| OSH awareness                     | yes   | 89               | 17           | 21              | 127             |
|                                   | no     | 20               | 3            | 1               | 24              |
| Total                             | 109    | 20               | 22           |                 | 151             |

Therefore, there is need to emphasize more sensitization, training and seminars to inform this group which is a significant number with no awareness of occupational safety and health practice in these health facilities within Uasin Gishu county.
4.1.2 Source of information on occupational health and safety Practice

The respondents were asked to state the source of information on occupational health and safety Practice. The results are given in Figure 4.2

As shown in the graph above figure 4.6, 40% of the respondents got information from seminars and workshop, 35% got information from training school attended, those who got from the posters were 17%, electronic media was a source of 1% of the respondents and 1% of the respondents read from the internet. 17% of the respondents never had knowledge on OSH awareness. From this statistics it implies that most of the health care workers depended on training schools and seminar workshops to be acquainted with OSH information in Uasin Gishu County. Further a comparison on the source of OSH information and the professions of the respondents.
4.1.3 Occupational Accidents and Risks

The respondents were asked to state the occupational accidents and risks they are exposed to in these facilities within Uasin Gishu County. The results are given in Figure 4.4

From the above figure it shows that 88% of the respondents agreed that there are occupational accidents in the facilities they work while only 12% disagreed. This shows that most of the respondents were aware of the occupational risks they are exposed to.

4.1.4 Common Hazards in the Health Care Facilities

The respondents were asked to state the frequent common hazards in the health facilities within Uasin Gishu County. The results are given in Figure 4.5 and 4.6

From the above figure it shows that 88% of the respondents agreed that there are occupational accidents in the facilities they work while only 12% disagreed. This shows that most of the respondents were aware of the occupational risks they are exposed to.
Figure 4.5 Biological Hazards Respondents are exposed to

From the findings on biological hazards exposure, air born disease is the leading hazard most health care workers are exposed to with 65%, followed by sharp related injury 63%, infection from patients 50%, cuts and wounds 39% and finally direct contaminations from specimens.

Non-biological hazards

<table>
<thead>
<tr>
<th>Non-Biological hazards</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>stress at work place</td>
<td>151</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>physical and verbal abuse at workplace</td>
<td>151</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>allergy at workplace</td>
<td>151</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>chemical spills at workplace</td>
<td>151</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>radiations at workplace</td>
<td>151</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 4.6 Non-biological hazards

From the findings on non-biological hazards exposure, stress at work place, 51% were exposed to chemicals spills at workplace, 50% were exposed to allergy at workplace, physical and verbal abuse at work place was at 38% and none was exposed to radiation from the respondents. Therefore there is need to find what form of stress and the cause so as to create an intervention that will manage it and ensure performance is attained.

4.1.5 Prevention of the occupational safety and health hazards

Further the respondents were asked on whether the occupational safety health hazards they are exposed to are preventable and all the respondents agreed on the preventability.

<table>
<thead>
<tr>
<th>OSH awareness</th>
<th>change your gloves</th>
<th>washing hands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>374*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>151</td>
<td>151</td>
</tr>
</tbody>
</table>

From the interview schedule the respondents stated that these hazards could be prevented by ensuring that medical checkup are done regularly in our hospital, risk assessment in this hospital, strict enforcement of health rules and regulations in our hospital, promoting well articulated hazard response measures and by ensuring that warning signs are clearly indicated and labeled in our hospital. This is supported by Court, (2003) who stated that with the promotion of health interventions which significantly lead to the prevention of injury ensured higher volumes in productivity in the organizations under study.

4.2 Effectiveness of OSH policies among health care workers

4.2.1 OSH awareness and the frequency of changing gloves and hand washing.

<table>
<thead>
<tr>
<th>OSH awareness</th>
<th>change your gloves</th>
<th>washing hands</th>
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</tr>
<tr>
<td>N</td>
<td>151</td>
<td>151</td>
</tr>
</tbody>
</table>
**. Correlation is significant at the 0.01 level (2-tailed).

From the table above it shows there is a positive correlation coefficient (.374) between OSH awareness and change of gloves, this indicates that there is a statistically significant ($p < .01$) linear relationship between these two variables such that the more aware one is on OSH practices the more the frequency of changing using gloves.

In the variables OSH awareness and hand washing, it also shows that there is a significant relationship between the two at (.321) which is statistically significant with a $p$ value < .01. From this study the frequency of changing gloves and washing hands is influenced by ones level of awareness on OSH.

### 4.2.2 OSH awareness and health safety Practices

Further an analysis to determine the association between OSH awareness and practices such as reporting and documenting accidents, use of eye wear at workplace, use dust coats and uniforms at workplace, immunized against Hgb, immunized against typhoid, provision of post exposure prophylaxis.

<table>
<thead>
<tr>
<th>Tab4.4 Correlations</th>
<th>OSH awareness</th>
<th>reporting and documenting accidents</th>
<th>use dust coats and uniforms at workplace</th>
<th>immunized against Hgb</th>
<th>immunized against typhoid</th>
<th>provision of post exposure prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.469**</td>
<td>.679**</td>
<td>-.359**</td>
<td>.165</td>
<td>.337**</td>
</tr>
<tr>
<td>OSH awareness Sig. (2-tailed)</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>043</td>
<td>000</td>
<td>000</td>
</tr>
<tr>
<td>N</td>
<td>151</td>
<td>151</td>
<td>151</td>
<td>151</td>
<td>151</td>
<td>151</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).  
*. Correlation is significant at the 0.05 level (2-tailed).

From the findings there is positive correlation coefficient of OSH awareness by (.469) with the significance $p$ value less than 0.01. The association between use of dust coat and uniforms at work place and OSH awareness has a strong positive correlation coefficient of (.679) with a significant $p$ value less than 0.01 significance. In testing the association between immunization against Hgb and OSH awareness is a strong negative correlation coefficient with a significant $P$ value less than 0.01.

OSH awareness was tested if it influences Immunization against Typhoid which had a positive correlation coefficient at (.165) and a $p$ value less than 0.05. In assessing association between provision of post exposure prophylaxis and OSH awareness, it had a strong positive correlation coefficient of (.337) and a $p$ value less than 0.01.

### V. Conclusion

From the study it was concluded that there are safety procedures developed in health care facilities in Uasin Gishu, and that there is high level of awareness of OSH among health care worker on risks and hazards they were exposed to. The study further found out that there was low awareness of OSH policies among the health care workers and low awareness compensations provided in case of incidents or accident at work place. All the respondents reported to have knowledge on prevention of these risks.

From the study most of the health care workers who had low OSH awareness were nursing profession with 83%. This study further found that most health care workers got there information from workshops and seminar and school trainings. Thus more seminars and workshop are required to bridge the gap noticed from healthcare workers who had no OSH awareness.

5.1 Recommendation of the Study

i. The county department of health should make specialist training in occupational health for their staff in their list of priorities and consequently make necessary budgetary allocations towards staff training. It should further consider establishment of health and safety committees and securing tools necessary for efficient operation of occupational health and safety services.

ii. The county governments should ensure provisions of this policy and technical guidelines apply to all health institutions and administrative units within the health sector. This will aid managers of health facilities in the implementation of the OSH policy which have been written with the laws of the country and other international OSH protocols in full view.

iii. Further hospital Management should put in place a regular monitoring team who will ensure that employees observe in strict terms safety measures put in place in order to avoid any mishaps and accidents.

### 5.1.2 Recommendation for Further Research

The study suggested further research on the factors determining the implementation of occupational health and safety awareness and practices at public health care facilities in Uasin Gishu, County, Kenya.
Assessment of Occupational Safety and Health Awareness and Practices in Public Health Facilities

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[9]. Of Companies quoted in the Nairobi Securities Exchange, Kenya., Jomo Kenyatta University of Agriculture & Technology


